

VIRGINIA WASTE  
MANAGEMENT  
BOARD

OCTOBER 28, 2022  
REGULAR BOARD  
MEETING

BOARD BOOK

## TENTATIVE AGENDA

### WASTE MANAGEMENT BOARD MEETING FRIDAY, OCTOBER 28, 2022

**BANK OF AMERICA BUILDING  
3<sup>RD</sup> FLOOR CONFERENCE ROOM  
1111 E. MAIN STREET  
RICHMOND, VIRGINIA**

**CONVENE – 10:00 A.M.**

<b>Agenda Item</b>	<b>Presenter</b>	<b>Tab</b>
1. Call to Order		
2. Review and Approve Minutes (October 8, 2021)		A
3. Final Exempt Regulations – Annual Update 2022, Virginia Hazardous Waste Management Regulations (9VAC20-60)	Ellis	B
4. Final Exempt Regulations – Annual Update 2022, Regulations Governing the Transportation of Hazardous Materials (9VAC20-110)	Norris	C
5. Final Regulations – Regulated Medical Waste Management Regulations (9VAC20-120)	Rohrer	D
6. Final Regulations – Solid Waste Management Regulations (9-VAC20-81)	Poland	E
7. Public Forum		
8. Virginia’s Response to Per- and Polyfluoroalkyl Substances (PFAS)	Steers	
9. Division Director Report/Significant Noncompliance Report/Updates	Perszyk	
10. Future Meetings		
11. Adjourn		

NOTES: The Board reserves the right to revise this agenda without notice unless prohibited by law. Revisions to the agenda include, but are not limited to, scheduling changes, additions, or deletions. Questions on the latest status of the agenda or should be directed to Jill R. Hrynciw at (804) 929-6559 or [Jill.Hrynciw@deq.virginia.gov](mailto:Jill.Hrynciw@deq.virginia.gov).

### **PUBLIC COMMENTS AT WASTE MANAGEMENT BOARD MEETINGS**

The Board encourages public participation in the performance of its duties and responsibilities. To this end, the Board has adopted public participation procedures for regulatory action and for case decisions. These procedures establish the times for the public to provide appropriate comment to the Board for its consideration.

For **REGULATORY ACTIONS** (adoption, amendment or repeal of regulations), public participation is governed by the Administrative Process Act and the Board's Public Participation Guidelines. Public comment is accepted during the Notice of Intended Regulatory Action phase (minimum 30-day comment period) and during the Notice of Public Comment Period on Proposed Regulatory Action (minimum 60-day comment period). Notice of these comment periods is announced in the Virginia Register, by posting to the Department of Environmental Quality and Virginia Regulatory Town Hall web sites and by mail to those on the Regulatory Development Mailing List. The comments received during the announced public comment periods are summarized for the Board and considered by the Board when making a decision on the regulatory action.

For CASE DECISIONS (issuance and amendment of permits and enforcement orders), the Board adopts public participation procedures in the individual regulations which establish the permit programs. As a general rule, public comment is accepted on a draft permit for a period of 30 days. If a public hearing is held, there is an additional comment period, usually 45 days, during which the public hearing is held.

In light of these established procedures, the Board accepts public comment on regulatory actions and case decisions, as well as general comments, at Board meetings in accordance with the following:

**REGULATORY ACTIONS:** Comments on regulatory actions are allowed only when the staff initially presents a regulatory action to the Board for final adoption. At that time, those persons who commented during the public comment period on the proposal are allowed up to 3 minutes to respond to the summary of the comments presented to the Board. Adoption of an emergency regulation is a final adoption for the purposes of this policy. Also, public comment will be accepted for certain final exempt actions where there has been no public comment period. Persons are allowed up to 3 minutes to address the Board on the emergency regulation and final exempt actions under consideration.

**POOLING MINUTES:** Those persons who commented during the public hearing or public comment period and attend the Board meeting may pool their minutes to allow for a single presentation to the Board that does not exceed the time limitation of 3 minutes times the number of persons pooling minutes, or 15 minutes, whichever is less.

**NEW INFORMATION** will not be accepted at the meeting. The Board expects comments and information on a regulatory action or pending case decision to be submitted during the established public comment periods. However, the Board recognizes that in rare instances new information may become available after the close of the public comment period. To provide for consideration of and ensure the appropriate review of this new information, persons who commented during the prior public comment period shall submit the new information to the Department staff contact listed below at least 10 days prior to the Board meeting. The Board's decision will be based on the Department-developed official file and discussions at the Board meeting. In the case of a regulatory action, should the Board or Department decide that the new information was not reasonably available during the prior public comment period, is significant to the Board's decision and should be included in the official file, the Department may announce an additional public comment period in order for all interested persons to have an opportunity to participate.

**PUBLIC FORUM:** The Board schedules a public forum at each regular meeting to provide an opportunity for citizens to address the Board on matters other than those on the agenda, pending regulatory actions or pending case decisions. Those persons wishing to address the Board during this time should indicate their desire when registering and limit their presentations to 3 minutes or less. Note, there is no pooling of minutes during the public forum.

The Board reserves the right to alter the time limitations set forth in this policy without notice and to ensure comments presented at the meeting conform to this policy.

Department of Environmental Quality Staff Contact: Jill R. Hrynciw, Policy Analyst, Division of Policy, Department of Environmental Quality, 1111 E. Main Street, Suite 1400, P.O. Box 1105, Richmond, Virginia 23218, phone (804) 929-6559; email [Jill.Hrynciw@deq.virginia.gov](mailto:Jill.Hrynciw@deq.virginia.gov)

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#### **Additional Meeting Information**

- Attendees are not entitled to be disorderly or disrupt the meeting from proceeding in an orderly, efficient, and effective fashion. Disruptive behavior may result in a recess of or removal from the meeting.
- Possession or use of any device that may disrupt the conduct of business is prohibited, including but not limited to: voice-amplification equipment; bullhorns; blow horns; sirens, or other noise-producing devices; as well as signs on sticks, poles or stakes; or helium-filled balloons.
- Attendees shall not block or gather in exits, doors, or aisles.
- Attendees shall not access non-public spaces/floors of the Building.
- All attendees are asked to be respectful of all speakers.
- Signs, banners, posters and other materials advocating the election or defeat of any candidate for public office may NOT be displayed at any time in any public space in the Building.

- Signs, banners, posters and other materials larger than standard paper size or with profane messages are not permitted.
  - Rules will be enforced fairly and impartially enforced, not only to ensure the participation and enjoyment of all meeting attendees, but for those persons working in the building so that they are able to perform their responsibilities.
  - All violators are subject to removal.
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Tab A



*Commonwealth of Virginia*

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Travis A. Voyles  
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus  
Director  
(804) 698-4020

**MEMORANDUM**

**TO:** Members of the Virginia Waste Management Board

**FROM:** Jill R. Hrynciw

**DATE:** May 5, 2022

**SUBJECT:** Minutes

Attached are the minutes from your meeting on October 8, 2021. Staff will seek your approval of these minutes at your next regular meeting on October 28, 2022.

If you have any questions, please contact me at (804) 929-6559 or [Jill.Hrynciw@deq.virginia.gov](mailto:Jill.Hrynciw@deq.virginia.gov)

Attachment

**MINUTES**  
**VIRGINIA WASTE MANAGEMENT BOARD MEETING**

**FRIDAY, OCTOBER 8, 2021**

**Board Members Present:**

EJ Scott, Chair	Amarjit Singh Riat	Eric A. DeGross
Michael Benedetto	Eric K. Wallace	
Jeffery T. Crate	Steven J. Yob	

**Department of Environmental Quality (Department):**

David K. Paylor, Director	Kathryn Perszyk	Tiffany Severs
Cindy M. Berndt	Lisa Ellis	Jeffery Steers
Jill R. Hrynciw	Michelle Callahan	

**Attorney General's Office:**

Christopher E. Bergin, Assistant Attorney General

These minutes summarize activities that took place at this Board meeting. The meeting was convened by the chairperson, Ms. EJ Scott, at 10:30 a.m. and was adjourned at 11:39 a.m.

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**Minute No. 1 - Introductions.**

Ms. EJ Scott led the Board, Agency Director and Assistant Attorney General in introductions.

**Minute No. 2 - Minutes.**

On a motion by Mr. Benedetto, and seconded by Mr. Riat, the Board unanimously approved the minutes from the Board's meeting on September 21, 2020.

**Minute No. 3 – Final Exempt Regulations – Virginia Hazardous Waste Management Regulations (9VAC20-60), Annual Update 2021**

Ms. Lisa Ellis of the Office of Financial Responsibility and Waste Programs presented a regulatory amendment to 9VAC20-60 for the Board's consideration for adoption. Ms. Ellis informed the Board that their Virginia Hazardous Waste Management Regulations under 9VAC20-60 are regularly amended to keep Virginia's regulation current with the federal regulations and that this annual update will cover the federal rules amended from July 1, 2020 to June 30, 2021. Ms. Ellis then provided an explanation of the changes to the regulations that were being included and explained that the Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations provisions were not included in the update. It was explained that the process used for this amendment is the final exempt process as stipulated in the Administrative Process Act (APA). In response to questions from a Board member regarding aerosol cans, Ms. Ellis explained that the Department was still considering the best path forward in Virginia.

Based on the Board book material, staff presentation and Board discussions, the Board, on a motion by Mr. Benedetto and seconded by Mr. Wallace, unanimously voted to adopt this amendment to 9VAC20-60 as a final regulation, authorized its publication, and affirmed that the Board will receive, consider and respond to petitions by any interested person at any time with respect to reconsideration or revision.

**Minute No. 4 – Final Exempt Regulations – Coal Combustion By-Product Regulations (9VAC20-85), HB1855 Amendment**

Ms. Kathryn Perszyk, Land Protection and Revitalization Director, presented a regulatory amendment to 9VAC20-85 for the Board’s consideration for adoption. Ms. Perszyk explained that the amendment was necessary based on the action of the General Assembly under Chapter 532 of the 2021 Special Session I Acts of Assembly that changed the name of the “Department of Mines, Minerals and Energy” to the “Department of Energy”. This regulatory amendment will update the Virginia Waste Management Board’s Coal Combustion By-Products Regulations in order to incorporate the name change as well as replace the acronym “DMME” with Virginia Department of Energy. Ms. Perszyk explained that this action was also a final exempt action as it was necessary to conform to changes in the Virginia statute and is exempt from the Administrative Process Act (APA). The Board had no questions regarding the final exempt amendment to 9VAC20-85.

Based on the Board book material and staff presentation, the Board, on a motion by Mr. Riat and seconded by Mr. Crate, unanimously voted to adopt this amendment to 9VAC20-85 as a final regulation, authorized its publication, and affirmed that the Board will receive, consider and respond to petitions by any interested person at any time with respect to reconsideration or revision.

**Minute No. 5 – Proposed Regulations – Solid Waste Management Regulations (9VAC20-81)**

Ms. Kathryn Perszyk, Land Protection and Revitalization Director, presented a regulatory amendment to 9VAC20-81. Ms. Perszyk advised the Board that the Virginia Solid Waste Management Regulations, establish standards and procedures for the siting, design, construction, operation, maintenance, closure, and post-closure care of solid waste facilities in the Commonwealth. It also establishes standards and procedures pertaining to the management of solid wastes. The requirements found in these regulations are protective of human health and the environment. Ms. Perszyk then provided details of the process used to develop the proposed amendment. Ms. Perszyk presented and explained the proposed changes to the regulation in the areas of Landfill Siting, Landfill Operations, Landfill Groundwater Monitoring, Open Burning Exemptions and other changes that promote composting activities, require closure cost estimates in response to Executive Order 6, to offer clarification and assist the regulated community with understanding of the requirements, and technical amendments. The Board asked clarifying questions.

Based on the Board book material, staff presentation, and Board discussions, the Board, on a motion by Mr. Riat and seconded by Mr. Crate, unanimously voted to approve the proposed regulation to proceed to public comment.

**Minute No. 6 - Significant Noncompliance Report.**

The Board received a report from Ms. Michelle Callahan, Land Protection and Revitalization Enforcement Manager, on the Hazardous Waste Significant Non-Compliers and Solid Waste Final Orders for land quarter of Federal Fiscal Year 2020 and first three quarters of Federal Fiscal Year 2021.

**Minute No. 7 - Public Forum.**

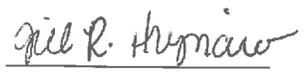
No members of the public spoke.

**Minute No. 8 – Division Director’s Report.**

The Board received a report from Kathryn Perszyk, Land Protection and Revitalization Director. Ms. Perszyk provided an overview of the land division’s programs and accomplishments.

**Minute No. 9 - Future Meetings.**

No future meetings were set for the Board at this meeting.



Jill R. Hrynciw  
Policy Analyst  
Division of Policy

DRAFT

# Tab B



*Commonwealth of Virginia*

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Director  
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Memorandum

To: Members of the Virginia Waste Management Board

Through: Kathryn Perszyk, Director, Division of Land Protection and Revitalization *KJP*

Through: Leslie Romanchik, Hazardous Waste Program Manager *LAR*

From: Lisa A. Ellis, Hazardous Waste Compliance Coordinator *LAE*

Date: September 14, 2022

Subject: Virginia Hazardous Waste Management Regulations, 9VAC 20-60  
Annual Update 2022

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The attached regulatory amendment is presented to the Board for your consideration for adoption. The final exempt action amends the Virginia Hazardous Waste Management Regulations under 9VAC 20-60. The Virginia Hazardous Waste Management Regulations include citations and requirements in the form of incorporated federal regulatory text at Title 40 of the Code of Federal Regulations (CFR). This regulatory amendment will bring these citations up to date and incorporate the latest Title 40 of the CFR to the one as published in the July 1, 2022 update (see Attachment B, Summary of Changes) which includes EPA's rule, *Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations* (84 FR 67202 12/9/2019) which had been put on hold during the 2021 regulatory update. However, the update will not include *Conforming Changes to Canada-Specific Hazardous Waste Import-Export Recovery and Disposal Operation Codes*, (86 FR 54381 10/1/2021) which will be adopted during a future regulatory update.

With this regulatory action, the Board is adopting the following EPA rule: *Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations* which was published in the Federal Register on December 9, 2019, and which will be administered by DEQ.

Section 2.2-4006 A 4 (c) of the Code of Virginia allows the Board to adopt this regulatory amendment to 9VAC20-60 as a final exempt regulatory action as the changes are necessary to

conform to changes in the federal regulations. This regulatory amendment will be effective 30 days after publication in the *Virginia Register*. A draft Virginia Regulatory Town Hall document and a table of the CFR changes are attached for your information.

At your Board meeting on October 28, 2022, the DEQ will request that the Board adopt Annual Update 2022 to 9VAC20-60, authorize its publication, and affirm that the Board will receive, consider and respond to requests by any interested person at any time with respect to reconsideration or revision.

cc: Jill Hrynciw, DEQ – Policy Division

**ATTACHMENTS:**

- Attachment A – Draft Virginia Regulatory Town Hall Document (TH-09)
- Attachment B – Summary of Changes to Federal Hazardous Waste Management Regulations for Annual Update 2022
- Attachment C – Economic Review Form
- Attachment D - Annual Update 2022 - Regulatory Text



[townhall.virginia.gov](http://townhall.virginia.gov)

## Exempt Action: Final Regulation Agency Background Document

Agency name	Virginia Waste Management Board
Virginia Administrative Code (VAC) Chapter citation(s)	9 VAC20-60
VAC Chapter title(s)	Virginia Hazardous Waste Management Regulations
Action title	Annual Update 2022
Final agency action date	October 28, 2022
Date this document prepared	September 14, 2022

This information is required for executive branch review pursuant to Executive Order 19 (2022) (EO 19), any instructions or procedures issued by the Office of Regulatory Management (ORM) or the Department of Planning and Budget (DPB) pursuant to EO 19. In addition, this information is required by the Virginia Registrar of Regulations pursuant to the Virginia Register Act (§ 2.2-4100 et seq. of the Code of Virginia). Regulations must conform to the Regulations for Filing and Publishing Agency Regulations (1 VAC 7-10), and the *Form and Style Requirements for the Virginia Register of Regulations and Virginia Administrative Code*.

### Brief Summary

*Provide a brief summary (preferably no more than 2 or 3 paragraphs) of this regulatory change (i.e., new regulation, amendments to an existing regulation, or repeal of an existing regulation). Alert the reader to all substantive matters. If applicable, generally describe the existing regulation.*

The **Virginia Hazardous Waste Management Regulations, 9VAC20-60**, include citations and requirements in the form of federal regulatory text at Title 40 of the Code of Federal Regulations (CFR) which is incorporated by reference. This regulatory amendment, **Annual Update 2022**, will bring the citations up to date and incorporate the 2022 Annual edition of Title 40 of the CFR published on July 1, 2022.

The incorporation by reference of Title 40 of the Code of Federal Regulations includes the provisions of EPA's **Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations (84 FR 67202 12/9/2019)**. However, this regulatory update does not include EPA's **Conforming Changes to Canada-Specific Hazardous Waste Import-Export**

*Recovery and Disposal Operation Codes, (86 FR 54381 10/1/2021) which will be adopted during the next regulatory update cycle.*

Sections 2.2-4006 A 4 (c) of the Code of Virginia allow the Board to adopt this regulatory amendment to 9VAC20-60 as a final exempt action as the changes are necessary to conform to changes in the federal regulations.

### **Mandate and Impetus**

*Identify the mandate for this regulatory change and any other impetus that specifically prompted its initiation (e.g., new or modified mandate, internal staff review, petition for rulemaking, periodic review, or board decision). For purposes of executive branch review, "mandate" has the same meaning as defined in the ORM procedures, "a directive from the General Assembly, the federal government, or a court that requires that a regulation be promulgated, amended, or repealed in whole or part."*

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**Conforming state regulations to those of the EPA is necessary to maintain federally granted authority to implement the national program.**

**Adoption of the changes allows Virginia to be consistent with the federal regulations, and provides more flexibility to the regulatory community with regard to management of these waste. This amendment incorporates recent changes made by EPA to federal hazardous waste regulations into Virginia's regulations.**

### **Acronyms and Definitions**

*Define all acronyms used in this form, and any technical terms that are not also defined in the "Definitions" section of the regulation.*

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**Board – Virginia Waste Management Board**  
**CFR – Code of Federal Regulations**  
**FR – Federal Register**  
**EPA – United States Environmental Protection Agency**  
**VAC – Virginia Administrative Code**  
**RCRA – Resource Conservation and Recovery Act**

### **Statement of Final Agency Action**

*Provide a statement of the final action taken by the agency including: 1) the date the action was taken; 2) the name of the agency taking the action; and 3) the title of the regulation.*

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**The Virginia Waste Management Board adopted this amendment, Annual Update 2022, to 9VAC20-60 on October 28, 2022, as a final regulation and affirmed that the Board will receive, consider and respond to requests by any interested person at any time with respect to reconsideration or revision.**

**Legal Basis**

*Identify (1) the agency or other promulgating entity, and (2) the state and/or federal legal authority for the regulatory change, including the most relevant citations to the Code of Virginia or Acts of Assembly chapter number(s), if applicable. Your citation must include a specific provision, if any, authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency or promulgating entity’s overall regulatory authority.*

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**Section 10.1-1402 of the Code of Virginia authorizes the Virginia Waste Management Board to issue regulations as may be necessary to carry out its powers and duties required by the Virginia Waste Management Act (Act). Additionally, Sections 2.2-4006 A 4 (c) of the Code of Virginia allow the Board to adopt this regulatory amendment to 9VAC20-60 as a final exempt action as the changes are necessary to conform to changes in the federal regulations.**

**Purpose**

*Explain the need for the regulatory change, including a description of: (1) the rationale or justification, (2) the specific reasons the regulatory change is essential to protect the health, safety or welfare of citizens, and (3) the goals of the regulatory change and the problems it’s intended to solve.*

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**Conforming the regulations to federal regulations is essential for the protection of the health, safety or welfare of citizens as it is necessary to maintain federally granted authority for the Commonwealth to implement the national program. Facilities also benefit from state implementation of the program as they have easier access to decision makers who have a clearer understanding of state-specific issues and needs.**

**Substance**

*Briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the “Detail of Changes” section below.*

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**The regulatory action, Annual Update 2022, will amend 9VAC20-60-18 to update the date of incorporation by reference of the Code of Federal Regulations to July 1, 2022, and incorporate the following rule promulgated by EPA in 2019 by removing the existing exception language:**

- ***Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations (84 FR 67202 12/9/2019)***

**The rule promulgated by EPA is a new rule that was designed to increase the recycling of aerosol cans by allowing generators to manage waste aerosol cans as universal wastes. Universal wastes are certain hazardous wastes that are more prevalent and impact more generators. EPA has determined that these UW can be managed under alternate less-stringent regulatory requirements.**

Aerosol cans were previously regulated nationally as hazardous waste if the aerosol can met the definition of hazardous waste, which most aerosol cans typically did (they were hazardous for ignitability and reactivity). The universal waste regulations are less onerous on the generators, with reduced on-site management requirements, as well as longer accumulation periods of wastes at the generator site.

However, this regulatory update does not include EPA’s *Conforming Changes to Canada-Specific Hazardous Waste Import-Export Recovery and Disposal Operation Codes*, (86 FR 54381 10/1/2021) which will be adopted during the next regulatory update cycle.

A summary of changes to the federal regulations is provided in Attachment B.

### Issues

*Identify the issues associated with the regulatory change, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, include a specific statement to that effect.*

The primary advantage of this amendment is that it conforms 9VAC20-60, *Virginia Hazardous Waste Management Regulations*, by updating the date of incorporation by reference of the Federal Code of Regulations and incorporating a new rule promulgated by the EPA (see Attachment B). Conforming our regulations to EPA’s recent rulemakings maintains Virginia’s federally granted authority to implement the national hazardous waste management program. Additionally, an advantage for businesses and facilities in Virginia is that, by keeping our rules as current as possible, they benefit from state implementation of the programs as they have easier access to decision makers who have a clearer understanding of state-specific issues and needs.

### Requirements More Restrictive than Federal

*Identify and describe any requirement of the regulatory change that is more restrictive than applicable federal requirements. Include a specific citation for each applicable federal requirement, and a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements, or no requirements that exceed applicable federal requirements, include a specific statement to that effect.*

There are no requirements of the regulatory update which are more restrictive than applicable federal requirements.

### Agencies, Localities, and Other Entities Particularly Affected

*Identify any other state agencies, localities, or other entities particularly affected by the regulatory change. “Particularly affected” are those that are likely to bear any identified disproportionate material impact, which would not be experienced by other agencies, localities, or entities. “Locality” can refer to either local governments or the locations in the Commonwealth where the activities relevant to the regulation or*

regulatory change are most likely to occur. If no agency, locality, or entity is particularly affected, include a specific statement to that effect.

Other State Agencies Particularly Affected:

**There are no other state agencies particularly affected by this regulatory amendment.**

Localities Particularly Affected:

**There are no localities particularly affected by this regulatory amendment.**

Other Entities Particularly Affected:

**There are no entities particularly affected by this regulatory amendment.**

**Details of All Changes Proposed in this Regulatory Action**

List all changes proposed in this action and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.

Current section number	New section number, if applicable	Current requirement	Change, intent, rationale, and likely impact of new requirements
9VAC20-60-18	N/A	Applicability of incorporated references based on the dates on which they became effective.	<p>Updated the 40 CFR citation to the most recent annual update of July 1, 2022.</p> <p>Removed the incorporation exception for <i>Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations</i> (84 FR 67202 12/9/2019).</p> <p>Adds the incorporation exception for EPA's <i>Conforming Changes to Canada-Specific Hazardous Waste Import-Export Recovery and Disposal Operation Codes</i>, (86 FR 54381 10/1/2021).</p>

**Regulatory Flexibility Analysis**

Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) establishing less stringent compliance or reporting requirements; 2) establishing less stringent schedules or deadlines for compliance or reporting requirements; 3) consolidation or simplification of compliance or reporting requirements; 4) establishing performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the regulatory change.

The *Virginia Hazardous Waste Management Regulations* apply to all facilities including small businesses. Any (1) establishment of less stringent compliance or reporting standards; (2) establishment of less stringent schedules or deadlines for compliance and reporting requirements; (3) consolidation or simplification of compliance or reporting requirements; (4) establishment of performance standards for small businesses to replace design or operational standards required in the regulation; or (5) exemption of small businesses from all or any part of the requirements contained in this regulation for all small businesses would directly, significantly and adversely affect the benefits achieved through the implementation of the regulations for the safe management of hazardous waste.

Conforming state regulations to those of the EPA is necessary to maintain federally granted authority to implement the national program. Facilities benefit from state implementation of the program as they have easier access to decision makers with a clearer understanding of state-specific issues and needs.

### **Family Impact**

*In accordance with § 2.2-606 of the Code of Virginia, please assess the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

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**There is no impact on the institution of the family or family stability.**

**Attachment B**

**EPA Rule Included with Annual Update 2022  
Title 40 of the CFR —July 1, 2021 through June 30, 2022, and February 7, 2020**

Title	Federal Register	Summary
<i>Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations</i>	(84 FR 67202 12/9/2019). The EPA version of the rule was effective on February 7, 2020, nationally in unauthorized states.	<p>The rule that was promulgated by EPA is a new rule that is designed to increase the recycling of aerosol cans. Aerosol cans are regulated as a hazardous waste if the aerosol can meets the definition of a hazardous waste, which most aerosol cans typically do (hazardous for ignitability and reactivity).</p> <p>The EPA rule is a less stringent way to manage these aerosol cans by including them as a new category of Universal Waste. Universal wastes are wastes that are so prevalent that EPA wanted to reduce the impacts of management on the regulated community in order to encourage recycling and/or proper disposal. The portion of the new regulation that allows generators to manage these hazardous wastes as universal wastes will be adopted by reference through a regulatory amendment to 9VAC20-60.</p>

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-60-18 9VAC20-60-260 9VAC20-60-261 9VAC20-60-262 9VAC20-60-263 9VAC20-60-264 9VAC20-60-265 9VAC20-60-266 9VAC20-60-268 9VAC20-60-270 9VAC20-60-273 9VAC20-60-279
<b>VAC Chapter title(s)</b>	Applicability of incorporated references based on the dates on which they became effective Hazardous Waste Management System: General; Identification and Listing of Hazardous Waste; Standards Applicable to Generators of Hazardous Waste; Standards Applicable to Transporters of Hazardous Waste; Standards for Owners and Operators of Hazardous Waste; Treatment, Storage and Disposal Facilities; Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities; Land Disposal Restrictions; EPA Administered Permit Programs: the Hazardous Waste Permit Program; Standards for Universal Waste Management; Standards for the Management of Used Oil
<b>Action title</b>	<b>Virginia Hazardous Waste Management Regulations Annual Update 2022</b>
<b>Date this document prepared</b>	SEPTEMBER 7, 2022

### **Cost Benefit Analysis**

Table 1a must be completed for all actions. Tables 1b and 1c must be completed for actions (or portions thereof) where the agency is exercising discretion, including those where some of the changes are mandated by state or federal law or regulation. Tables 1b and 1c are not needed if **all** changes are mandated, and the agency is not exercising any discretion. In that case, enter a statement to that effect.

- (1) Direct Costs & Benefits: Identify all specific, direct economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (A direct impact is one that affects entities regulated by the agency and which directly results from the regulatory change itself, without any intervening steps or effects. For example, the direct impact of a regulatory fee change is the change in costs for these regulated entities.) When describing a particular economic impact, specify which new requirement or change in requirement creates the anticipated economic impact. Keep in mind that this is the proposed change versus the status quo. One bullet has been provided, add additional bullets as needed.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
  - (c) Enter the present value of the direct costs based on the worksheet.
  - (d) Enter the present value of the direct benefits based on the worksheet.
- (3) Benefits-Costs Ratio: Calculate d divided by c OR enter it from the worksheet.
- (4) Net Benefit: Calculate d minus c OR enter it from the worksheet.
- (5) Indirect Costs & Benefits: Identify all specific, indirect economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (An indirect impact is one that results from responses to the regulatory change, but which are not directly required by the regulation. Indirect impacts of a regulatory fee change on regulated entities could include a change in the prices they charge, changes in their operating procedures or employment levels, or decisions to enter or exit the regulated profession or market. Indirect impacts also include responses by other entities that have close economic ties to the regulated entities, such as suppliers or partners.) If there are no indirect costs or benefits, include a specific statement to that effect.
- (6) Information Sources: Describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (7) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

### **Introduction:**

Annual Regulatory Update 2022 of the Virginia Hazardous Waste Management Regulations adds by reference the [EPA Rule, "Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations."](#) The Aerosol Can Universal Waste proposed rule regulatory update may potentially affect both large quantity generators (LQGs) and small quantity generators (SQGs) that currently generate, transport, treat, recycle, or dispose of hazardous waste aerosol cans. The proposed rule is unlikely to affect Very Small Quantity Generators (VSQGs) as VSQGs are already operating under streamlined requirements and are likely to continue operating as VSQGs in the post-rule environment. This Economic Impact Form estimates the cost savings of the proposed regulatory update as the difference between affected

facilities' baseline and waste management cost estimates if the rule was in place versus the current costs without the rule in place. This approach, taken by EPA in the document used to create this form ([EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018](#)), was designed specifically to estimate the cost impacts associated with changes in generator status that may occur as a result of the rule. Aerosol cans managed as universal waste do not count toward a facility's generator status. As a result, a number of facilities may drop in generator status (e.g., from LQG to SQG, or from SQG to VSQG) under the proposed rule. This change in status may lead to cost savings for affected facilities.

**EPA performed a national cost benefit analysis when this rule was proposed by EPA in 2017. DEQ is proposing to adopt the rule by reference. Therefore, we are using the EPA cost benefit analysis to complete this Economic Impact Form using Virginia hazardous waste generator numbers.**

For both the baseline and the post-regulation adoption case, this Economic impact form estimates three broad categories of RCRA Subtitle C costs:

- 1. One-time costs:** For newly regulated hazardous waste generators, these costs include: (1) notifying EPA of their hazardous waste activity (LQGs and SQGs only), (2) developing a closure plan (LQGs only), (3) creating a contingency plan (LQGs only), and (4) rule familiarization. Under the proposed rule, new facilities that enter the universe may avoid or reduce these costs if their generator status changes relative to baseline, but universal waste handlers must still notify EPA of their waste generation activity (large quantity handlers or LQHs only) and familiarize themselves with the rule.
- 2. Fixed annual costs:** Fixed annual costs are incurred for activities that remain relatively constant from year to year for an LQG or SQG regardless of the quantity of waste generated. These include reviewing the relevant regulations, RCRA Subtitle C compliance recordkeeping, personnel safety training, manifest training, hazardous waste labelling, and inspections of hazardous waste storage areas. This category also includes costs that are incurred every other year (e.g. biennial reporting costs) or every third year (manifest training) that have been annualized to reflect a consistent value. For universal waste handlers (that are not LQGs or SQGs under RCRA), fixed annual costs are more limited and include only annual review of the regulations and personnel safety training.
- 3. Variable Costs:** Variable costs change with the quantity of hazardous waste generated, quantity of hazardous waste shipped, and the number of hazardous waste shipments made by each facility. Under RCRA Subtitle C, the three categories of variable costs are (1) the cost of properly filling out a manifest and land disposal restriction notification for each shipment, (2) the cost of shipping hazardous waste using a certified hazardous waste transporter, and (3) the cost of disposal for hazardous waste. For aerosol cans managed as universal waste, however, variable costs include basic recordkeeping for waste shipments (LQHs only) and universal waste transportation costs, both of which are less costly than the corresponding costs for hazardous waste. Additionally, disposal costs are the same for hazardous wastes and universal wastes.

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

<p>(1) Direct Costs &amp; Benefits</p>	<p><b>The incorporation by reference of Title 40 of the Code of Federal Regulations includes the provisions of <a href="#">EPA Rule, “Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations.” (84 FR 67202 12/9/2019)</a>. This rule allows generators to manage waste under the Universal Waste Rule as specified under the Code of Federal Regulations, specifically 40 CFR 273, as an alternative to managing as a hazardous waste. Aerosol cans managed as universal waste are not subject to the full hazardous waste requirements, and are exempt from 40 CFR parts 260 through 268 if managed to the conditions of this exemption. Nationally, adding aerosol cans to the Universal Waste Rule simplifies handling and disposal for generators, while ensuring proper management of aerosol cans and transportation to appropriate destination facilities. This rule is less stringent than existing federal rules. Therefore, authorized state adoption is optional.</b></p> <p>Direct Costs:</p> <ul style="list-style-type: none"> <li>• <b>None. The change in regulatory status of aerosol cans does not require any change by existing hazardous waste generators that will incur any new direct costs by these facilities. Hazardous waste generators are anticipated to benefit by saving money through this regulatory update. Generators are eagerly anticipating Virginia’s adoption of the rule.</b></li> </ul> <p>Direct Benefits:</p> <ul style="list-style-type: none"> <li>• <b>Possible reduction in hazardous waste management costs and management/paperwork requirements by hazardous waste generators as a result of smaller generator status and longer waste accumulation timeframe/reduced waste requirements for aerosol cans and/or recycling aerosol cans in lieu of disposal;</b></li> <li>• <b>Adoption of the changes allows Virginia to be consistent with the federal regulations and with other states who adopt federal regulations, and provides more flexibility to the regulatory community with regard to management of these wastes.</b></li> <li>• <b>Promoting recycling of aerosol cans should divert many aerosol cans that are still being disposed (incorrectly) by businesses in landfills as regular solid waste.</b></li> </ul> <p>EPA has calculated that for any generators that are able to drop in generator status as a result of no longer having to count aerosol cans as part of their hazardous waste generation, there will be a cost savings. Based on the information in the following tables, a facility that drops from a Large Quantity Generator to a Small Quantity Generator will have fixed annual cost savings of \$3400/year. A facility that drops from a Large Quantity Generator to a Very Small Quantity Generator will save approximately \$6300 to \$7220 in fixed</p>
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annual costs each year. A facility that starts as a Small Quantity Generator and goes to a Very Small Quantity Generator as a result of the new regulation can expect to see a reduction in fixed costs of \$2900 to \$3820/year.

**Table 1A-1 EPA CALCULATED PERCENTAGES OF FACILITIES GENERATING AEROSOL CANS IN MINNESOTA, WASHINGTON AND MASSACHUSETTS (STATES WITH BIENNIAL REPORTING BY ALL LEVELS OF GENERATOR)**

STATUS	GENERATOR COUNT	MINNESOTA PERCENT	GENERATOR COUNT	WASHINGTON PERCENT	GENERATOR COUNT	MASSACHUSETTS PERCENT	TOTAL	
							COUNT	PERCENT
LQG	530	15.3%	323	19.9%	371	23.6%	1,224	18.4%
SQG	691	20.0%	1,039	64.1%	714	45.5%	2,444	36.8%
VSQG	2,240	64.7%	258	15.9%	484	30.8%	2,982	44.8%

**TABLE 1A-2 VIRGINIA ESTIMATED POTENTIALLY IMPACTED UNIVERSE (GENERATORS THAT GENERATE SPENT AEROSOL CANS)**

GENERATOR STATUS	TOTAL NUMBER OF GENERATORS IN VIRGINIA UNIVERSE	ESTIMATED TOTAL NUMBER OF AEROSOL CAN GENERATING FACILITIES IN VIRGINIA USING % FROM TABLE 1A-1	ANNUAL ESTIMATED AEROSOL CAN GENERATION PER GENERATOR*	ANNUAL ESTIMATED AEROSOL CAN GENERATION IN CURRENT UNIVERSE (TONS)
LQGs	325	18.4% (325) = 60	1.765 TONS/LQG	106
SQGs	2,071	36.8% (2,071) = 762	0.468 TONS/SQG	356
TOTAL	2,396	822	2.23 TONS/GEN	462

\*Generation rate sourced from EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table ES-1

**TABLE 1A-3 BASELINE GENERATOR UNIT COSTS (2017\$)**

COST FEATURE	UNIT COSTS			
	LQG		SQG	
	HIGH ESTIMATE	LOW ESTIMATE	HIGH ESTIMATE	LOW ESTIMATE
<b>One-Time Costs (New Facilities Only)</b>				
Notification of Hazardous Waste Activity	\$62	\$62	\$62	\$62
Rule Familiarization	\$1,739	\$424	\$1,739	\$155
Closure (create closure plan)	\$8,509	\$8,509	\$0	\$0
Contingency Planning	\$731	\$731	\$0	\$0
<b>TOTALS</b>	<b>\$11,041</b>	<b>\$9,726</b>	<b>\$1,801</b>	<b>\$217</b>
<b>Fixed Annual Costs</b>				
Annual Review of Regulations	\$93	\$93	\$61	\$61
Subtitle C Recordkeeping	\$41	\$41	\$41	\$41
Biennial Reporting (annualized cost)*	\$463	\$463	\$0	\$0
Personnel Safety Training (annualized cost)	\$4,192	\$4,192	\$1,341	\$1,341
Manifest Training	\$296	\$296	\$296	\$296
Labeling	\$74	\$74	\$25	\$25
Inspections	\$2,560	\$2,560	\$2,560	\$2,560
<b>TOTALS</b>	<b>\$7,719</b>	<b>\$7,719</b>	<b>\$4,324</b>	<b>\$4,324</b>

Variable Costs				
Manifesting and Land Disposal Restriction Notification per shipment	\$58	\$58	\$56	\$56
Hazardous Waste Transportation (per shipment) 6 & 4 tons/truck and 200 miles/shipment for LQG and SQG	\$215 + \$0.216/ton-mile			
Hazardous Waste Disposal (Incineration, 12 tons-SQG; 16 tons-LQG)	\$4,573/ton			
Source: EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table 7: Baseline Unit Costs *The Biennial Reporting cost assumes that each facility has 20 waste streams, based on the average number of waste streams observed in the BR for baseline LQGs.				

**TABLE 1A-4 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR UNDER EXISTING REQUIREMENTS**

COST CATEGORY	LQG COSTS		SQG COSTS	
	HIGH	LOW	HIGH	LOW
One-Time Costs	\$11,041	\$9,726	\$1,801	\$217
Annual Costs	\$7,719	\$7,719	\$4,324	\$4,324
Variable Costs	\$74,433	\$74,432	\$55,504	\$55,504
<b>Total Costs</b>	<b>\$93,193</b>	<b>\$91,914</b>	<b>\$61,629</b>	<b>\$60,045</b>

Since aerosol cans are currently managed as hazardous waste, aerosol cans are included in this total

LQG Variable Costs assumes 4 shipments per year and 4 tons per shipment

SQG Variable Costs assumes 2 shipments per year and 6 tons per shipment

**TABLE 1A-5-POST-RULE GENERATOR UNIT COSTS**

REQUIRED COSTS	UNIT COSTS			
	LQHUW		SQHUW	
	HIGH ESTIMATE	LOW ESTIMATE	HIGH ESTIMATE	LOW ESTIMATE
<b>One-Time Costs</b>				
Notification of Hazardous Waste Activity	\$62	\$62	\$0	\$0
Rule Familiarization	\$268	\$268	\$188	\$188
<b>TOTALS</b>	<b>\$330</b>	<b>\$330</b>	<b>\$188</b>	<b>\$188</b>
<b>Annual Costs</b>				
Annual Review of Regulations	\$93	\$93	\$61	\$61
Personnel Safety Training (annualized cost)	\$1,326	\$1,326	\$652	\$440
<b>TOTALS</b>	<b>\$1,419</b>	<b>\$1,419</b>	<b>\$713</b>	<b>\$501</b>
<b>Variable Costs</b>				
Shipping Recordkeeping (per shipment)	\$4	\$4	\$0	\$0
Universal Waste Transportation (per shipment)	\$143 + \$0.162/ton-mile			
Hazardous Waste Disposal (Incineration)	\$4,573.11/ton			
Universal Waste Disposal (Incineration)	\$4,573.11/ton			
Universal Waste Recycling	\$0/ton			
Source: EPA's Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule, Feb 2018, Table 10: Post-Rule Unit Costs				

**TABLE 1A-6 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR TO MANAGE AEROSOL CANS AS UNIVERSAL WASTE**

COST CATEGORY	LQG DISPOSAL HIGH	LQG DISPOSAL LOW	LQG RECYCLE HIGH	SQG DISPOSAL HIGH	SQG DISPOSAL LOW	SQG RECYCLE HIGH
One Time Cost	\$330	\$330	\$330	\$188	\$188	\$188
Annual Cost	\$1,419	\$1,419	\$1,419	\$713	\$501	\$713
Variable Cost	\$8,253	\$8,253	\$204	\$2,308	\$2,308	\$158
<b>TOTAL COSTS FOR AEROSOL CANS AS UW</b>	<b>\$10,002</b>	<b>\$10,002</b>	<b>1,953</b>	<b>\$3,209</b>	<b>\$2,997</b>	<b>\$1,059</b>

Variable Costs assume 1 shipment/year of Aerosol Cans as Universal Wastes, travel distance of 200 miles  
From Table 1A-2, an LQG generates 1.76 tons & an SQG generates 0.47 tons of aerosol cans

**TABLE 1A-7 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR AFTER THE REGULATORY UPDATE (HIGH)**

GENERATOR STATUS	TOTAL WASTE GENERATED	AEROSOL CANS GENERATED	HW GENERATED	COST HW DISPOSAL	COST UW WITH RECYCLING (TABLE 1A-6)	TOTAL COST
LQG	16 TONS/YEAR MINIMUM	1.76 TONS	14.24 TONS	\$85,144	\$1,953	\$87,097
SQG	12 TONS/YEAR MAXIMUM	0.47 TONS	11.53 TONS	\$61,629	\$1,059	\$60,539

**TABLE 1A-8 COMPARISON OF COSTS – MANAGING ALL AS HW VERSUS MANAGING HW AS HW AND RECYCLING UNIVERSAL WASTE (2017 DOLLARS)**

GENERATOR STATUS	TOTAL COST TO MANAGE AS HW (TABLE 1A-4)	TOTAL COST TO MANAGE HW AS HW AND RECYCLE UW (TABLE 1A-7)	TOTAL SAVINGS PER GENERATOR TO MANAGE AEROSOL CANS AS UW ANNUALLY	TOTAL SQG AND LQG GENERATING AEROSOL CANS IN VIRGINIA (TABLE 1A-2)	TOTAL ESTIMATED SAVINGS ACROSS LQG AND SQG UNIVERSES ANNUALLY IN VA
LQG	\$93,193	\$87,097	\$6,095	762	\$4,644,737
SQG	\$61,629	\$60,539	\$1,090	60	\$65,405

Total savings across existing LQG and SQG universe is \$4.71 million.

(2) Quantitative Factors	Estimated Dollar Amount	Present Value
Direct Costs	(a) None. \$0	(c) None. \$0
Direct Benefits	(b) \$1,090/year for SQG \$6,095/year for LQG Annual total from table 1A-8 above for LQG and SQG generators in VA- \$4.71M	(d) 2018: 1.018 – \$4.79M 2019: 1.023 – \$4.90M 2020: 1.017 – \$4.99M 2021: 1.012 – \$5.05M 2022: 1.046 – \$5.28M
(3) Benefits-Costs Ratio	None.	(4) Net Benefit \$5.28 million dollars for LQG and SQG

		generators of aerosol cans in VA annually	
(5) Indirect Costs & Benefits	<p><b>There are no indirect costs. The primary indirect benefit will be that generators of spent aerosol cans that were formerly required to manage these cans as hazardous waste now no longer have to count these wastes toward their hazardous waste total which can lower their generator status and decrease their requirements; generators can accumulate these wastes longer on site (up to one year) and manage them as universal wastes which has less stringent and potentially less expensive regulatory requirements.</b></p>		
(6) Information Sources	<p><a href="#">EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018</a></p>		
(7) Optional	<p><b>The proposed regulatory change would not impose any new requirements on regulated entities; rather, it allows a generator to manage aerosol cans under a different, less expensive and less burdensome set of requirements as a Universal Waste rather than a hazardous waste.</b></p> <p><b>For both the baseline and the policy case, the EPA document used estimates in three broad categories of RCRA Subtitle C costs:</b></p> <ol style="list-style-type: none"> <li><b>1. <u>One-time costs:</u></b> For facilities becoming new hazardous waste generators, these costs include: (1) notifying EPA of their hazardous waste activity (LQGs and SQGs only), (2) developing a closure plan (LQGs only), (3) creating a contingency plan (LQGs only), and (4) rule familiarization. Under the proposed rule, new facilities that enter the universe may avoid or reduce these costs if their generator status changes relative to baseline, but universal waste handlers must still notify EPA of their waste generation activity (large quantity handlers only) and familiarize themselves with the rule.</li> <li><b>2. <u>Fixed annual costs:</u></b> Fixed annual costs are incurred for activities that remain relatively constant from year to year for an LQG or SQG regardless of the quantity of waste generated. These include reviewing the relevant regulations, RCRA Subtitle C compliance recordkeeping, personnel safety training, manifest training, hazardous waste labelling, and inspections of hazardous waste storage areas. This category also includes costs that are incurred every other year (e.g. biennial reporting costs) or every third year (manifest training) that have been annualized to reflect a consistent value. For universal waste handlers (that are not LQGs or SQGs under RCRA), fixed annual costs are more limited and include only annual review of the regulations and personnel safety training.</li> <li><b>3. <u>Variable Costs:</u></b> Variable costs change with the quantity of hazardous waste generated, quantity of hazardous waste shipped, and the number of hazardous waste shipments made by each facility. Under RCRA Subtitle C,</li> </ol>		

	<p>the three categories of variable costs are (1) the cost of properly filling out a manifest and land disposal restriction notification for each shipment, (2) the cost of shipping hazardous waste using a certified hazardous waste transporter, and (3) the cost of disposal for hazardous waste. For aerosol cans managed as universal waste, however, variable costs include basic recordkeeping for waste shipments (LQHs only) and universal waste transportation costs, both of which are less costly than the corresponding costs for hazardous waste. Additionally, disposal costs are the same for hazardous wastes and universal wastes.</p>
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**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

Currently, hazardous waste generators are required to count aerosol cans toward their hazardous waste generation total, and to manage these aerosol cans as hazardous waste. The higher the generator’s hazardous waste total, the more stringent and expensive the requirements are for the generator. Also, hazardous waste generators currently have a hazardous waste accumulation time limit which can result in smaller, more frequent shipments of hazardous waste to a treatment, storage or disposal facility, transported by a hazardous waste transporter. Smaller, more frequent shipments by a HW generator can cost a generator more than less frequent shipments.

Agency Note: This is a new regulation that allows an existing hazardous waste stream to be managed under an existing lesser set of requirements that will to reduce the regulatory burden for the regulated community. The costs provided below indicate the approximate costs to facilities of continued management of aerosol cans as hazardous wastes, and continued compliance with hazardous waste requirements under a generator’s current hazardous waste generator status.

<p>(1) Direct Costs &amp; Benefits</p>	<p>See <a href="#">Baseline Costs</a> in Table 1A on page 5.</p> <ul style="list-style-type: none"> <li>• Direct Costs: Notification of HW Activity</li> <li>• Direct Costs: Rule Familiarization</li> <li>• Direct Costs: Closure (Create Closure Plans)</li> <li>• Direct Costs: Contingency Planning</li> <li>• Direct Costs: Annual Review of Regulations</li> <li>• Direct Costs: Subtitle C Recordkeeping</li> <li>• Direct Costs: Biennial Report Annualized Cost</li> <li>• Direct Costs: Personnel Safety training (annualized cost)</li> <li>• Direct Costs: Manifest Training</li> <li>• Direct Costs: Labeling</li> <li>• Direct Costs: Inspections</li> <li>• Direct Costs: Manifesting and Land Disposal Restriction Notification (per shipment)</li> <li>• Direct Costs: Hazardous Waste Transportation (per shipment)</li> </ul>
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<ul style="list-style-type: none"> <li>Direct Costs: Hazardous Waste Disposal (incineration)</li> </ul> <p>Direct Benefits – Compliance with the Virginia Hazardous Waste Management Regulations; Avoidance of penalties for non-compliance</p> <p><b>TABLE 1A-4 ESTIMATED TOTAL COSTS PER YEAR PER GENERATOR UNDER EXISTING REQUIREMENTS</b></p> <table border="1"> <thead> <tr> <th rowspan="2">COST CATEGORY</th> <th colspan="2">LQG Costs</th> <th colspan="2">SQG Costs</th> </tr> <tr> <th>HIGH</th> <th>LOW</th> <th>HIGH</th> <th>LOW</th> </tr> </thead> <tbody> <tr> <td>One-Time Costs</td> <td>\$11,041</td> <td>\$9,726</td> <td>\$1,801</td> <td>\$217</td> </tr> <tr> <td>Annual Costs</td> <td>\$7,719</td> <td>\$7,719</td> <td>\$4,324</td> <td>\$4,324</td> </tr> <tr> <td>Variable Costs</td> <td>\$74,433</td> <td>\$74,432</td> <td>\$55,504</td> <td>\$55,504</td> </tr> <tr> <td><b>Total Costs</b></td> <td><b>\$93,193</b></td> <td><b>\$91,914</b></td> <td><b>\$61,629</b></td> <td><b>\$60,045</b></td> </tr> </tbody> </table> <p>Since aerosol cans are currently managed as hazardous waste, aerosol cans are included in this total  LQG Variable Costs assumes 4 shipments per year and 4 tons per shipment  SQG Variable Costs assumes 2 shipments per year and 6 tons per shipment</p>		COST CATEGORY	LQG Costs		SQG Costs		HIGH	LOW	HIGH	LOW	One-Time Costs	\$11,041	\$9,726	\$1,801	\$217	Annual Costs	\$7,719	\$7,719	\$4,324	\$4,324	Variable Costs	\$74,433	\$74,432	\$55,504	\$55,504	<b>Total Costs</b>	<b>\$93,193</b>	<b>\$91,914</b>	<b>\$61,629</b>	<b>\$60,045</b>
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(2) Quantitative Factors	Estimated Dollar Amount	Present Value																												
Direct Costs	(a) \$52.55M [LQGs (\$93,193 x 60 = \$5.6M) + SQGs (\$61,629 x 762 = \$47M) Total disposal costs for all generators who generate aerosol cans to manage all HW under current regulations	(c) 2018: 1.018 – \$53.5M 2019: 1.023 – \$54.7M 2020: 1.017 – \$55.7M 2021: 1.012 – \$56.3M 2022: 1.046 – \$58.9M																												
Direct Benefits	(b) Hazardous Waste Compliance – dollar value is in no penalties	(d) N/A																												
(3) Benefits-Costs Ratio	0	(4) Net Benefit																												
(5) Indirect Costs & Benefits	No benefit in complying with the existing HW regulations over complying with the regulations if the update is adopted.																													
(6) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>																													
(7) Optional	None																													

**Table 1c: Costs and Benefits under an Alternative Approach – Not evaluated**

DEQ can: 1) Retain existing regulatory language that requires generators of spent aerosol cans to comply with full hazardous waste requirements; 2) Adopt EPA’s rule to increase the recycling of aerosol cans by allowing management of these wastes as universal wastes; or 3) Propose to adopt the Aerosol Cans as Universal waste rule with some additional changes to the waste regulations that result in more stringent management of spent aerosol cans. Option 2, to adopt the Regulatory Update as written, results in fewer requirements and lower costs for generators of spent aerosol cans and possible savings in the management of these wastes. Option 3 is not being evaluated under the current regulatory update.

**Statement:** DEQ will either retain the current language as written which requires that generators continue to manage aerosol cans as hazardous waste, or will adopt EPA’s Aerosol Cans as Universal Waste rule as incorporated into EPA’s regulations at 40 CFR Parts 260 – 279 in its totality. A third scenario has not been proposed and is not being proposed for adoption by DEQ.

**Impact on Local Partners**

- (1) Describe the direct costs and benefits (as defined on page 1) for local partners in terms of real monetary costs and FTEs. Local partners include local or tribal governments, school divisions, or other local or regional authorities, boards, or commissions. If local partners are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
- (3) Indirect Costs & Benefits: Describe any indirect benefits and costs (as defined on page 1) for local partners that are associated with all significant changes. If there are no indirect costs or benefits, include a specific statement to that effect.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (5) Assistance: Identify the amount and source of assistance provided for compliance in both funding and training or other technical implementation assistance.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 2: Impact on Local Partners**

(1) Direct Costs & Benefits	Direct Costs: There are no <u>new</u> costs to local partners associated with the proposed regulatory changes.
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	<p>Direct Benefits: The regulated community, including local partners who are hazardous waste generators, will benefit from the regulatory changes. The regulatory changes are written to encourage recycling of spent aerosol cans to reduce the number of cans being thrown away in lieu of being properly managed. Currently, aerosol cans must be managed as hazardous wastes under the full set of hazardous waste requirements including waste status determination, waste counting to determine generator status, containerization, labeling, accumulation time, transportation by a hazardous waste transporter and management at a permitted hazardous waste treatment, storage or disposal facility. Under the proposed regulatory update, generators would:</p> <ul style="list-style-type: none"> <li>• Be able to ship universal wastes without a RCRA Subtitle C manifest and without using RCRA-regulated hazardous waste transporters.</li> <li>• Have the potential for lower generator status which could remove the necessity to file biennial reports, prepare contingency plans, and comply with Land Disposal Restriction notifications.</li> <li>• Allow for simpler training of employees.</li> <li>• Increase the time over which generators can accumulate aerosol cans which should result in fewer shipments of wastes and associated reduced costs.</li> </ul> <p>Impact on local partners' direct costs and indirect costs can be found in Tables 1A and 1B.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) None. \$0
(3) Indirect Costs & Benefits	There are no identified indirect costs.
(4) Information Sources	<a href="#">EPA Document "Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule", February 2018</a>
(5) Assistance	None.

(6) Optional	none
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**Economic Impacts on Families**

- (1) Describe the direct costs and benefits (as defined on page 1) to a typical family of three (average family size in Virginia according to the U. S. Census) arising from any proposed regulatory changes that would affect the costs of food, energy, housing, transportation, healthcare, and education. If families are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe any indirect costs and benefits (as defined on page 1) to a typical family of three that are most likely to result from the proposed changes.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (5) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 3: Impact on Families**

(1) Direct Costs & Benefits	<p>Direct Costs: There are no costs to families associated with these regulatory changes. Changes impact generators of hazardous waste, and households are exempt from having to manage their wastes as hazardous wastes.</p> <p>Direct Benefits: Under current RCRA regulations, aerosol cans are categorized as hazardous waste and must be managed by a permitted RCRA hazardous waste treatment, storage, and disposal facility (TSDF). Because the contents and/or propellant within aerosol cans may be flammable, these cans may adversely impact human health and the environment if not properly disposed. In the absence of government intervention, facilities that generate aerosol cans (“generators”) would likely send them to municipal solid waste landfills (MSWLFs), which generally are less protective of human health and the environment than disposal at TSDFs.</p> <p>While the RCRA Subtitle C requirements, when followed, reduce the risks associated with aerosol cans, facilities that generate aerosol cans do not</p>
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	always manage these wastes in compliance with RCRA regulations. Many generators may not realize that aerosol cans are hazardous or may be unaware of the proper method of disposing of these wastes. The proposed designation of aerosol cans as Universal Waste (UW) will address this issue by simplifying the process of managing aerosol cans as hazardous waste. The UW designation will reduce the regulatory burden and cost of properly disposing of aerosol cans, creating an incentive for generators to dispose of them appropriately.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) None. \$0
(3) Indirect Costs & Benefits	There are no indirect costs to families.
(4) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>
(5) Optional	None

### **Impacts on Small Businesses**

- (1) Describe the direct costs and benefits (as defined on page 1) for small businesses. For purposes of this analysis, “small business” means the same as that term is defined in § 2.2-4007.1. If small businesses are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe the indirect benefits and costs (as defined on page 1) for small businesses that are most likely to result from the proposed changes.
- (4) Alternatives: Add a qualitative discussion of any equally effective alternatives that would make the regulatory burden on small business more equitable compared to other affected business sectors, and how those alternatives were identified.

- (5) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 4: Impact on Small Businesses**

(1) Direct Costs & Benefits	<p>Direct Costs: None.</p> <p>Direct Benefits: The regulated community will benefit from the regulatory changes. Small businesses may be a positively impacted group as a result of the proposed regulatory update, assuming that some small businesses are small quantity generators of hazardous waste.</p> <p>These regulatory changes are being made to conform to the requirements of federal regulations. While the aerosol can regulatory update is less stringent than the existing requirements to manage aerosol cans as hazardous waste, the proposed change to allow the generators to manage spent aerosol cans as universal waste will have a positive impact on small businesses in that small businesses will no longer have to count spent aerosol can toward their hazardous waste generation rate, can accumulate these wastes longer on site than previously allowed, have fewer on-site requirements if their generator status drops down a level, and will not have to use a hazardous waste manifest or hazardous waste transporter to ship these wastes off site.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None. \$0
Direct Benefits	(b) See benefits calculated in Table 1A under SQG headings.
(3) Indirect Costs & Benefits	There are no indirect costs.
(4) Alternatives	None.
(5) Information Sources	<a href="#">EPA Document “Regulatory Impact Analysis of Proposed Rule To Add Aerosol Cans to the Universal Waste Rule”, February 2018</a>

(6) Optional	None
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**Changes to Number of Regulatory Requirements**

*For each individual VAC Chapter amended, repealed, or promulgated by this regulatory action, list (a) the initial requirement count, (b) the count of requirements that this regulatory package is adding, (c) the count of requirements that this regulatory package is reducing, (d) the net change in the number of requirements. This count should be based upon the text as written when this stage was presented for executive branch review. Five rows have been provided, add or delete rows as needed.*

**Table 5: Total Number of Requirements**

This regulatory amendment does not place any additional regulatory requirements on the regulated community; rather, it offers an alternative, less burdensome management option for spent aerosol cans that are currently required to be managed as hazardous waste. The Universal Waste Regulations already exist in the regulations; this regulatory update simply adds another waste to the list of wastes that can be managed as Universal Waste rather than hazardous waste. Sections 2.2-4006 A 4 (c) of the Code of Virginia allow the Board to adopt this regulatory amendment to 9VAC20-60 as a final exempt action as the changes are necessary to conform to changes in the federal regulations.

**Attachment D:**

**Virginia Hazardous Waste Management Regulations**

**Annual Update 2022**

**for October 28, 2022, Waste Management Board Meeting**

**(Incorporation of Final Rule-Increasing Recycling: *Adding Aerosol Cans to the Universal Waste Regulations* (84 FR 67202 12/9/2019).)**

**9VAC20-60-18. Applicability of incorporated references based on the dates on which they became effective.**

A. Except as noted, when a regulation of the United States Environmental Protection Agency (EPA) set forth in Title 40 of the Code of Federal Regulations is referenced and incorporated into this chapter, that regulation shall be as it exists and has been published in the July 1, ~~2021~~2022, annual edition; however, the incorporation by reference of Title 40 of the Code of Federal Regulations shall not include the requirements of EPA's Response to Vacatur of Certain Provisions of the Definition of Solid Waste Rule (83 FR 24664, May 30, 2018) or ~~Increasing Recycling: Adding Aerosol Cans to the Universal Waste Regulations (84 FR 67202, 12/9/2019)~~ Conforming Changes to Canada-specific Hazardous Waste Import-Export Recovery and Disposal Operation Codes (86 FR 54381, 10/1/2021).

# Tab C



*Commonwealth of Virginia*

***VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY***

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Travis A. Voyles  
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus  
Director  
(804) 698-4020

To: Members of the Virginia Waste Management Board

Through: Kathryn Perszyk  
Director, Land Protection & Revitalization Division 

From: William K. Norris  
Guidance and Regulation Coordinator

Date: September 22, 2022

Subject: Regulations Governing the Transportation of Hazardous Materials, 9VAC20-110  
Annual Update 2022

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The attached regulatory amendment is presented to the Board for your consideration for adoption. The Final Exempt Action amends the Regulations Governing the Transportation of Hazardous Materials, 9VAC20-110. Each year, the U.S. Department of Transportation makes changes to the federal regulations regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations (49 CFR). As 9VAC20-110 incorporates certain parts of 49 CFR, it is necessary to amend 9VAC20-110 in order to incorporate the federal changes. The last update covered the changes made to 49 CFR during the period of October 1, 2018 through September 30, 2019. This amendment will bring the 49 CFR citations in 9VAC20-110 up to date and incorporate the applicable changes to 49 CFR to the most current CFR published in the October 1, 2022 annual edition.

Section 2.2-4006 A 4 (c) of the Code of Virginia allows the Board to adopt this regulatory amendment to 9VAC20-110 as the changes are necessary to conform to changes in the federal regulations. This regulatory amendment will be effective 30 days after publication in the *Virginia Register*. A draft Virginia Regulatory Town Hall document, an Economic Review Form, a copy of the required regulatory text changes and two tables of the CFR changes are attached for your information.

At your Board meeting on October 28, 2022, the DEQ will request that the Board adopt Annual Update 2022 to 9VAC20-110, authorize its publication, and affirm that the Board will receive,

consider and respond to requests by any interested person at any time with respect to reconsideration or revision.

Attachments:

- TH09-Exemptfinal\_2022 Form
- Changes to Title 49 of the CFR – PHMSA
- Changes to Title 49 of the CFR – FMCSA
- Economic Review Form
- RIS Project Report – Project 7334 – 9VAC20-110-110

cc: Jill R. Hrynciw, DEQ Policy Division



[townhall.virginia.gov](http://townhall.virginia.gov)

## Exempt Action: Final Regulation Agency Background Document

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-110
<b>VAC Chapter title(s)</b>	Regulations Governing the Transportation of Hazardous Materials
<b>Action title</b>	<b>Annual Update 2022</b>
<b>Final agency action date</b>	October 28, 2022
<b>Date this document prepared</b>	October 1, 2022

This information is required for executive branch review pursuant to Executive Order 19 (2022) (EO 19), any instructions or procedures issued by the Office of Regulatory Management (ORM) or the Department of Planning and Budget (DPB) pursuant to EO 19. In addition, this information is required by the Virginia Registrar of Regulations pursuant to the Virginia Register Act (§ 2.2-4100 et seq. of the Code of Virginia). Regulations must conform to the Regulations for Filing and Publishing Agency Regulations (1 VAC 7-10), and the *Form and Style Requirements for the Virginia Register of Regulations and Virginia Administrative Code*.

### Brief Summary

*Provide a brief summary (preferably no more than 2 or 3 paragraphs) of this regulatory change (i.e., new regulation, amendments to an existing regulation, or repeal of an existing regulation). Alert the reader to all substantive matters. If applicable, generally describe the existing regulation.*

Virginia's *Regulations Governing the Transportation of Hazardous Materials* under 9VAC20-110, incorporate by reference certain federal regulations from Title 49 of the Code of Federal Regulations (CFR). This amendment will bring these regulations up to date with the latest update to Title 49 of the CFR as published on October 1, 2022. Section 2.2-4006.A.4 (c) of the Administrative Process Act allows the Board to adopt this regulatory amendment as a final exempt action as the changes are necessary to conform to changes in federal regulations.

Each year the U.S. Department of Transportation (U.S. DOT) makes several changes to the federal rules (see Attachments A and B) regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations. Since Virginia's regulations incorporate the federal regulations, with certain exceptions, it is only necessary to change one item to bring Virginia's regulations up-to-date with the federal changes. The item that must be amended is 9VAC20-110-110, which specifies the date of the

federal regulations that are incorporated into Virginia’s regulations. For the ease of use by the regulated community, this date is always October 1; however, the text is amended to change the year, thus incorporating the federal changes from October 1 of the previous year through September 30 of the new year (in this case, from October 1, 2019 through September 30, 2022).

**Mandate and Impetus**

*Identify the mandate for this regulatory change and any other impetus that specifically prompted its initiation (e.g., new or modified mandate, internal staff review, petition for rulemaking, periodic review, or board decision). For purposes of executive branch review, “mandate” has the same meaning as defined in the ORM procedures, “a directive from the General Assembly, the federal government, or a court that requires that a regulation be promulgated, amended, or repealed in whole or part.”*

Each year, the U.S. DOT makes several changes to the federal rules regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations. Since Virginia’s regulations for transportation of hazardous materials (9VAC20-110) incorporate certain parts of the federal regulations, it is necessary to update 9VAC20-110-110 in order to incorporate U.S. DOT’s most recent rulemakings since the last update.

Conforming state regulations to those of the DOT is necessary to maintain federally granted authority to implement the national program.

**Acronyms and Definitions**

*Define all acronyms used in this form, and any technical terms that are not also defined in the “Definitions” section of the regulation.*

- CFR- Code of Federal Regulations
- Department – Department of Environmental Quality
- DOT – Department of Transportation
- FMCSA – US DOT’s Federal Motor Carrier Safety Administration
- PHMSA – US DOT’s Pipeline and Hazardous Materials Safety Administration
- U.S. DOT – United States Department of Transportation

**Statement of Final Agency Action**

*Provide a statement of the final action taken by the agency including: 1) the date the action was taken; 2) the name of the agency taking the action; and 3) the title of the regulation.*

The Virginia Waste Management Board adopted this regulatory amendment to 9VAC20-110 on October 28, 2022 as a final regulation and affirmed that the Board will receive, consider and respond to requests by any interested person at any time with respect to reconsideration or revision.

**Legal Basis**

*Identify (1) the agency or other promulgating entity, and (2) the state and/or federal legal authority for the regulatory change, including the most relevant citations to the Code of Virginia or Acts of Assembly chapter number(s), if applicable. Your citation must include a specific provision, if any, authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency or promulgating entity’s overall regulatory authority.*

These regulations are issued under authority of Article 7 (§ 10.1-1450 et seq.) of Chapter 14 of Title 10.1 of the Code of Virginia, Transportation of Hazardous Materials.

**Purpose**

*Explain the need for the regulatory change, including a description of: (1) the rationale or justification, (2) the specific reasons the regulatory change is essential to protect the health, safety or welfare of citizens, and (3) the goals of the regulatory change and the problems it's intended to solve.*

The purpose of this regulatory action is to amend 9VAC20-110 to incorporate several changes to the federal rules regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations. Since Virginia's regulations incorporate the federal regulations, with certain exceptions, it is only necessary to change one item to bring Virginia's regulations up-to-date with the federal changes.

**Substance**

*Briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the "Detail of Changes" section below.*

Each year the U.S. Department of Transportation (U.S. DOT) makes several changes to the federal rules (see Attachment A and B) regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations. Since Virginia's regulations incorporate the federal regulations, with certain exceptions, it is only necessary to change one item to bring Virginia's regulations up-to-date with the federal changes. The item that must be amended is 9VAC20-110-110, which specifies the date of the federal regulations that are incorporated into Virginia's regulations. For the ease of use by the regulated community, this date is always October 1; however, the text is amended to change the year, thus incorporating the federal changes from October 1 of the previous year through September 30 of the new year (in this case, from October 1, 2019 through September 30, 2022).

**Issues**

*Identify the issues associated with the regulatory change, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, include a specific statement to that effect.*

There are no disadvantages to the public or the Commonwealth associated with the proposed regulatory changes.

**Details of All Changes Proposed in this Regulatory Action**

*List all changes proposed in this action and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.*

The item that must be amended is 9VAC20-110-110, which specifies the date of the federal regulations that are incorporated into Virginia's regulations.

Current section number	New section number, if applicable	Current requirements in VAC	Change, intent, rationale, and likely impact of new requirements
9VAC20-110-110		Transportation of Hazardous Materials – Compliance with Federal Regulations	Change in date of amendments promulgated by U.S. DOT from October 1, 2019 to October 1, 2022, This change incorporates the federal changes from October 1 of the previous year through September 30 of the new year (in this case, from October 1, 2019 through September 30, 2022).

**Regulatory Flexibility Analysis**

*Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) establishing less stringent compliance or reporting requirements; 2) establishing less stringent schedules or deadlines for compliance or reporting requirements; 3) consolidation or simplification of compliance or reporting requirements; 4) establishing performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the regulatory change.*

Since Virginia’s regulations incorporate the federal regulations, with certain exceptions, this regulatory action is necessary to bring the regulations up-to-date with the federal changes related to transportation of hazardous materials.

**Family Impact**

*In accordance with § 2.2-606 of the Code of Virginia, please assess the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one’s spouse, and one’s children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

There is no impact on the institution of the family or family stability.

Attachment A

Changes to Title 49 of the CFR – October 1, 2019 – September 30, 2022  
US DOT’s Pipeline and Hazardous Materials Safety Administration (PHMSA)

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
1	05/11/2020 Docket No. PHMSA-2017-0108 (HM2150)	49 CFR 171; 49 CFR 172; 49 CFR 173; 49 CFR 174; 49 CFR 175; 49 CFR 176; 49 CFR 178; 49 CFR 180	<a href="#">85 FR 27810 (05/11/2020)</a>	PHMSA is issuing this final rule to amend the Hazardous Materials Regulations (HMR) to maintain alignment with international regulations and standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations, and vessel stowage requirements. These revisions are necessary to harmonize the HMR with recent changes made to the International Maritime Dangerous Goods Code, the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air, and the United Nations Recommendations on the Transport of Dangerous Goods—Model Regulations. Additionally, PHMSA is adopting several amendments to the HMR that would allow for increased alignment with the Transport Canada, Transportation of Dangerous Goods Regulations.
2	08/24/2020 Docket No. PHMSA-2018-0025 (HM-264)	49 CFR 172; 49 CFR 173; 49 CFR 174; 49 CFR 179; 49 CFR 180	<a href="#">85 FR 44994 (07/24/2020)</a>	PHMSA, in coordination with the Federal Railroad Administration (FRA), is amending the Hazardous Materials Regulations (HMR) to allow for the bulk transport of “Methane, refrigerated liquid,” commonly known as liquefied natural gas (LNG), in rail tank cars. This rulemaking authorizes the transportation of LNG by rail in DOT-113C120W specification rail tank cars with enhanced outer tank requirements, subject to all applicable requirements and certain additional operational controls. The enhancements to the outer tank are indicated by the new specification suffix “9” (DOT-113C120W9).

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
3	11/30/2020 Docket No. PHMSA-2017-0083 (HM-219B)	49 CFR 180	<a href="#">85 FR 68790 (10/30/2020)</a>	The Pipeline and Hazardous Materials Safety Administration (PHMSA) is amending the requirements of the requalification periods for certain Department of Transportation (DOT) 4-series specification cylinders in non-corrosive gas service in response to a petition for rulemaking submitted by the National Propane Gas Association (NPGA).
4	12/03/2020 Docket No. PHMSA-2017-0108 (HM-2150)	49 CFR 171; 49 CFR 172; 49 CFR 173; 49 CFR 174; 49 CFR 175; 49 CFR 176; 49 CFR 178; 49 CFR 180	<a href="#">85 FR 78029 (12/03/2020)</a>	Making a correction in Rule Document 2020-06205 appearing on pages 27810 through 27852 in the issue of Monday, May 11, 2020.
5	12/28/2020 Docket No. PHMSA-2017-0120 (HM-219C)	49 CFR 107; 49 CFR 171; 49 CFR 172; 49 CFR 173; 49 CFR 178; 49 CFR 179; 49 CFR 180	<a href="#">85 FR 75680 (11/25/2020)</a>	The Pipeline and Hazardous Materials Safety Administration (PHMSA) is amending the Hazardous Materials Regulations in response to 24 petitions for rulemaking submitted by the regulated community between February 2015 and March 2018. This final rule updates, clarifies, or provides relief from various regulatory requirements without adversely affecting safety. PHMSA also, as of the effective date of this final rule, withdraws its September 28, 2017 enforcement discretion regarding the phase-out of mobile refrigeration systems.

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
6	1/21/2021 Docket No. PHMSA-2018-0082 (HM-260A)	49 CFR 107; 49 CFR 171; 49 CFR 172; 49 CFR 173; 49 CFR 174; 49 CFR 175; 49 CFR 176; 49 CFR 177; 49 CFR 178; 49 CFR 179; 49 CFR 180	<a href="#">85 FR 83366 (12/21/2020)</a>	This final rule corrects editorial errors and improves the clarity of certain provisions in the Hazardous Materials Regulations and PHMSA program and procedural regulations. The intended effect of this rulemaking is to enhance the accuracy and reduce misunderstandings of the regulations. The amendments contained in this final rule are non-substantive changes and do not impose new requirements.
7	1/21/2021 Docket No. PHMSA-2018-0082 (HM-260A)	49 CFR 107; 49 CFR 171; 49 CFR 172; 49 CFR 173; 49 CFR 174; 49 CFR 175; 49 CFR 176; 49 CFR 177; 49 CFR 178; 49 CFR 179; 49 CFR 180	<a href="#">86 FR 2564 (01/13/2021)</a>	Making a correction In Rule Document 2020-23353 appearing on pages 83366 through 83403 in the issue of Monday, December 21, 2020.

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
8	01/27/2021 Docket No. PHMSA-2011-0140 (HM-234)	49 CFR 107; 49 CFR 171; 49 CFR 173; 49 CFR 178; 49 CFR 180	<a href="#">85 FR 85380 (12/28/2020)</a>	PHMSA is amending the Hazardous Materials Regulations (HMR) to revise certain requirements applicable to the manufacture, use, and requalification of DOT-specification cylinders. PHMSA is taking this action in response to petitions for rulemaking submitted by stakeholders and agency review of compressed gas cylinder regulations. Specifically, PHMSA is incorporating by reference or updating the references to several Compressed Gas Association publications, amending the filling requirements for compressed and liquefied gases, expanding the use of salvage cylinders, and revising and clarifying the manufacture and requalification requirements for cylinders.
9	5/3/2021	49 CFR 107; 49 CFR 171	<a href="#">86 FR 23241 (05/03/2021)</a>	In accordance with the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, this final rule provides the 2021 inflation adjustment to civil penalty amounts that may be imposed for violations of certain DOT regulations. In addition, this rule amends the Federal Aviation Administration regulations to set forth the new civil penalties established in Division V, Title I of the Consolidated Appropriations Act, 2021. The rule also corrects a rounding error in an FAA penalty.
10	3/21/2022	49 CFR 107; 49 CFR 170	<a href="#">87 FR 15839 (03/21/2022)</a>	This final rule provides the statutorily-prescribed 2022 adjustment to civil penalty amounts that may be imposed for violations of certain DOT regulations. In addition, this rule notes new DOT civil penalties authority provided in the Bipartisan Infrastructure Law (BIL, enacted as the Infrastructure Investment and Jobs Act).

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
11	08/25/2022 Docket No. PHMSA-2019-0030 (HM-215P)	49 CFR 171; 49 CFR 172; 49 CFR 173; 29 CFR 175; 49 CFR 176; 49 CFR 178; 49 CFR 180	<a href="#">87 FR 44944 (07/26/2022)</a>	PHMSA is amending the Hazardous Materials Regulations (HMR) to maintain alignment with international regulations and standards by adopting various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations, and vessel stowage requirements. Additionally, PHMSA is amending the HMR to allow for better alignment with Transport Canada's Transportation of Dangerous Goods Regulations. PHMSA is also withdrawing the unpublished October 1, 2020, Notice of Enforcement Policy Regarding International Standards on use of select updated international standards in complying with the HMR during the pendency of this rulemaking.

**Attachment B**

Changes to Title 49 of the CFR – October 1, 2019 – September 30, 2022  
 US DOT's Federal Motor Carrier Safety Administration (FMCSA)

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
1	09/29/2020 Docket No. FMCSA-2018-0248	49 CFR 395	<a href="#">85 FR 33396 (06/01/2020)</a>	FMCSA revises the hours of service (HOS) regulations to provide greater flexibility for drivers subject to those rules without adversely affecting safety. The Agency expands the short-haul exception to 150 air-miles and allows a 14-hour work shift to take place as part of the exception; expands the driving window during adverse driving conditions by up to an additional 2 hours; requires a 30-minute break after 8 hours of driving time (instead of on-duty time) and allows an on-duty/not driving period to qualify as the required break; and modifies the sleeper berth exception to allow a driver to meet the 10-hour minimum off-duty requirement by spending at least 7, rather than at least 8 hours of that period in the berth and a minimum off-duty period of at least 2 hours spent inside or outside of the berth, provided the two periods total at least 10 hours, and that neither qualifying period counts against the 14-hour driving window.
2	07/07/2021 Docket No. FMCSA-2020-0135	49 CFR 390; 49 CFR 391	<a href="#">86 FR 35633 (07/07/2021)</a>	FMCSA amends its regulations by making technical corrections throughout the Federal Motor Carrier Safety Regulations (FMCSRs). The Agency makes minor changes to correct inadvertent errors and omissions, remove or update obsolete references, and improve the clarity and consistency of certain regulatory provisions. The Agency also makes nondiscretionary, ministerial changes that are statutorily mandated and changes that merely align regulatory requirements with the underlying statutory authority. Finally, this rule contains two minor changes to FMCSA's rules of agency procedure or practice that relate to separation of functions and allowing FMCSA and State personnel to conduct off-site compliance reviews of motor carriers following the same safety fitness determination criteria used in on-site compliance reviews.

Item	Effective Date	Affected 9VAC20-110 49 CFR Part	Federal Register (Publication Date)	Summary
3	10/14/2021 Docket No. PMCSA-2021-0132	49 CFR 390; 49 CFR 391; 49 CFR 393; 49 CFR 395; 49 CFR 396	<a href="#">86 FR 57060 (10/14/2021)</a>	FMCSA amends its regulations by making technical corrections throughout the Federal Motor Carrier Safety Regulations (FMCSRs). The Agency makes minor changes to correct inadvertent errors and omissions, remove or update obsolete references, and improve the clarity and consistency of certain regulatory provisions. The Agency also makes nondiscretionary, ministerial changes that merely align regulatory requirements with the underlying statutory authority. Finally, FMCSA adds two new provisions for transparency relating to agency management and to FMCSA's rules of organization, procedures, or practice, and makes corresponding changes to definitions, addresses, and employee titles throughout the FMCSRs.
4	12/09/2021 Docket No. FMCSA-2019-0211	49 CFR 393; 49 CFR 396	<a href="#">86 FR 62105 (11/09/2021)</a>	FMCSA amends the Federal Motor Carrier Safety Regulations (FMCSRs) to include rear impact guards on the list of items that must be examined as part of the required annual inspection for each commercial motor vehicle (CMV). In addition, FMCSA amends the labeling requirements for rear impact guards, and excludes road construction controlled (RCC) horizontal discharge trailers from the rear impact guard requirements, consistent with changes made by the National Highway Traffic Safety Administration (NHTSA) to the corresponding Federal Motor Vehicle Safety Standards (FMVSS). This final rule responds to rulemaking petitions, as well as a recommendation from the Government Accountability Office (GAO).

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-110
<b>VAC Chapter title(s)</b>	Regulations Governing the Transportation of Hazardous Materials
<b>Action title</b>	Annual Update
<b>Date this document prepared</b>	September 14, 2022

**Summary of Regulatory Action: Regulations Governing the Transportation of Hazardous Materials – Annual Update:** Each year, the U.S. Department of Transportation makes changes to the federal regulations regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations (49 CFR). As 9VAC20-110 incorporates certain parts of 49 CFR, it is necessary to amend 9VAC20-110 in order to incorporate the federal changes.

**Statutory Authority:** §§ 10.1-1450 and 44-146.30 of the Code of Virginia; 49 USC §§ 1809 through 1810; 49 CFR Parts 107, 170 through 180, 383, and 390 through 397.

**Cost Benefit Analysis**

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>• <b>All the changes to the regulations are mandated and the agency is not exercising any discretion.</b></li> <li>• <b>The amendment to 9VAC20-110 is necessary to conform to changes to the federal regulations regarding the transportation of hazardous materials in Title 49 of the Code of Federal Regulations (49 CFR).</b></li> <li>• <b>As 9VAC20-110 incorporates certain parts of 49 CFR, it is necessary to amend 9VAC20-110-110 in order to incorporate the federal changes.</b></li> <li>• Direct Costs: None: The Annual Update of the Virginia Regulations Governing the Transportation of Hazardous Materials is necessary to conform to changes in federal regulations which are currently in place.</li> <li>• Direct Benefits: The Annual Update of the regulations is necessary to for the implementation of the requirements governing the transportation of hazardous materials by the Virginia State Police.</li> </ul>
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(2) Quantitative Factors	Estimated Dollar Amount	Present Value	
Direct Costs	(a) None	(c) None	
Direct Benefits	(b) None	(d) None	
(3) Benefits-Costs Ratio	None	(4) Net Benefit	None
(5) Indirect Costs & Benefits	There are no indirect costs. The primary indirect benefit will be that the Virginia State Police will continue to implement the requirements governing the transportation of hazardous materials as mandated by changes to the Code of Federal Regulations.		
(6) Information Sources	Section 49 of the CFR.		
(7) Optional			

**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

Not Required: All changes are mandated and the agency is not exercising any discretion.

**Table 1c: Costs and Benefits under an Alternative Approach**

Not Required: All changes are mandated and the agency is not exercising any discretion.

**Impact on Local Partners**

**Table 2: Impact on Local Partners**

(1) Direct Costs & Benefits	Direct Costs: There are no direct costs associated with this regulatory amendment.  Direct Benefits: These regulatory amendments are being made to conform to changes in the federal regulations which are currently in effect.	
(2) Quantitative Factors	Estimated Dollar Amount	
Direct Costs	(a) None	
Direct Benefits	(b) None	

(3) Indirect Costs & Benefits	There are no indirect costs. The primary indirect benefit will be that the requirements governing the transportation of hazardous materials will continue to be implemented and enforced.
(4) Information Sources	Section 49 of the CFR
(5) Assistance	None.
(6) Optional	

**Economic Impacts on Families**

**Table 3: Impact on Families**

(1) Direct Costs & Benefits	<p>Direct Costs: There are no costs to families associated with this regulatory change.</p> <p>Direct Benefits: These regulatory amendments are being made to conform to changes in the federal regulations which are currently in effect.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None.
Direct Benefits	(b) None.
(3) Indirect Costs & Benefits	There are no indirect costs. The primary indirect benefit will be that the requirements governing the transportation of hazardous materials will continue to be implemented and enforced.
(4) Information Sources	Section 49 of the CFR
(5) Optional	

**Impacts on Small Businesses**

**Table 4: Impact on Small Businesses**

(1) Direct Costs & Benefits	<p>Direct Costs: There are no costs to small businesses associated with this regulatory change.</p> <p>Direct Benefits: These regulatory amendments are being made to conform to changes in the federal regulations which are currently in effect.</p>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a) None.
Direct Benefits	(b) None.
(3) Indirect Costs & Benefits	There are no indirect costs. The primary indirect benefit will be that the requirements governing the transportation of hazardous materials will continue to be implemented and enforced.
(4) Alternatives	None.
(5) Information Sources	Section 49 of the CFR
(6) Optional	

**Changes to Number of Regulatory Requirements**

This regulatory amendment does not place any additional regulatory requirements on the regulated community. Rather it provides the mechanism for the continued implementation by the Virginia State Police of regulations governing the transportation of hazardous materials.

1 **Project 7334 - Exempt Final**

2 **Virginia Waste Management Board**

3 **Annual Update to Regulations Governing the Transportation of Hazardous Materials**  
4 **9VAC20-110-110. Compliance.**

5 Every person who transports or offers for transportation hazardous materials within or through  
6 the Commonwealth of Virginia shall comply with the federal regulations governing the  
7 transportation of hazardous materials promulgated by the U.S. Secretary of Transportation with  
8 amendments promulgated as of October 1, ~~2019~~ 2022, pursuant to the Hazardous Materials  
9 Transportation Act, and located at Title 49 of the Code of Federal Regulations as set forth below  
10 and which are incorporated in these regulations by reference:

- 11 1. Special Permits. 49 CFR Part 107, Subpart B.
- 12 2. Registration of Cargo Tank and Cargo Tank Motor Vehicle Manufacturers, Assemblers,  
13 Repairers, Inspectors, Testers, and Design Certifying Engineers in 49 CFR Part 107,  
14 Subpart F.
- 15 3. Registration of Persons Who Offer or Transport Hazardous Materials in 49 CFR Part  
16 107, Subpart G.
- 17 4. Hazardous Materials Regulations in 49 CFR Parts 171 through 177.
- 18 5. Specifications for Packagings in 49 CFR Part 178.
- 19 6. Specifications for Tank Cars in 49 CFR Part 179.
- 20 7. Continuing Qualification and Maintenance of Packagings in 49 CFR Part 180.
- 21 8. Motor Carrier Safety Regulations in 49 CFR Parts 390 through 397.

# Tab D



*Commonwealth of Virginia*

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Travis A. Voyles  
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus  
Director  
(804) 698-4020

**Memorandum**

**To:** Virginia Waste Management Board Members  
**Through:** Kathryn Perszyk, Director, Land Protection and Revitalization Division *KJP*  
**From:** Stephanie Bellotti, Regulation and Guidance Coordinator, Division of Water Planning  
**Date:** September 19, 2022  
**Subject:** Final Regulatory Action: Amendment to repeal and amend the Regulated Medical Waste Management Regulations (9VAC20-120 (repeal) and 9VAC20-121 (new))

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**I. Introduction:**

At the October 28, 2022, meeting of the Virginia Waste Management Board, the Department will request the Board to adopt final amendments to the Regulated Medical Waste Management Regulations (9VAC20-120 (formally) and 9VAC20-121 (new)). The purpose of this amendment is to streamline and clarify the requirements of the existing Regulated Medical Waste Management Regulations, and modernize the standards for general handling and treatment of RMW based on current industry best management practices.

**II. Statutory Authority**

The legal basis for the Virginia Regulated Waste Management Regulations (9VAC20-120) is the Virginia Waste Management Act (Chapter 14 of Title 10.1 of the Code of Virginia). Specifically §10.1-1402 of the Code of Virginia authorizes the Board to supervise and control waste management activities in the Commonwealth and to promulgate regulations necessary to carry out its powers and duties.

**III. Background**

During and after the 2014-2015 Ebola virus outbreak, DEQ assisted healthcare facilities and other state and local agencies with planning for the management of Ebola-contaminated waste, which is considered a Category A waste. Category A waste must be managed in accordance with more stringent handling,

storage, transport, and treatment requirements than other types of RMW in order to prevent the spread of highly infectious disease. The existing Regulated Medical Waste Management Regulations do not specifically address the management of Category A waste. Therefore, DEQ relied on interim guidance from the Center for Disease Control (CDC) EPA, USDOT, and other entities while working one-on-one with facilities to ensure that management would be protective of human health and environment.

Following the Ebola virus disease outbreak, the CDC awarded the Virginia Department of Health (VDH) with a grant (Public Health and Emergency Preparedness (PHEP) Supplemental Funding for Ebola Preparedness and Response Activities) through the Hospital Preparedness Program and PHEP Cooperative Agreement. Under a Memorandum of Understanding (MOU). VDH administered grant funds to DEQ in 2016 to contract subject matter experts (SMEs) to perform a systematic review of the Regulated Medical Waste Management Regulations in order to identify gaps in the existing regulation and to propose revisions to address current industry best management practices for Category A waste and other types of RMW. The SMEs proposed changes to streamline the Regulated Medical Waste Management Regulations for generators of RMW, and permitted facilities, update performance standards for treatment technologies, and clarify specific protocols for validation and periodic challenge testing. DEQ formed an internal RMW workgroup to evaluate the SME's proposal prior to submitting a NOIRA for Executive Review on June 12, 2018.

These proposed regulations, 9VAC20-121 et seq. will replace the existing Regulated Medical Waste Management Regulations, 9VAC20-120 et seq..

#### **IV. Regulatory Process**

A Notice of Intended Regulatory Action (NOIRA) was published in the Virginia Register on May 27, 2019. During the comment period, comments in support of updating the Regulations were submitted by five commenters.

At the December 9, 2019 Board meeting, the proposed regulatory amendment was approved for public comment. After receiving approval from the Governor, the proposed regulatory amendment and notice announcing the public comment period was published in the Virginia Register on January 31, 2022. The public comment period ended on April 18, 2022. There were seven commenters on the proposed amendment. A summary of the comments received and DEQ's responses is provided in the attached TH-03 document. Based on DEQ's review of the public comments, several changes to the proposal were made.

#### **V. Final Amendments to the Regulation**

Substantive revisions to the Regulated Medical Waste Management Regulations include:

- Providing conditional exemptions to encourage safe collection and proper management of specific types of RMW, such as sharps;
- Clarifying RMW storage requirements for generators and permitted facilities;
- Streamlining the permit structure and clarifying activities exempt from permitting;
- Specifying the siting, design, operation, recordkeeping, and reporting requirements of RMW transfer stations and treatment facilities;
- Requiring validation and periodic challenge testing for treatment technologies;
- Clarifying procedures for the management of Category A wastes;
- Improving the alternate treatment technology petition process; and
- Overall improvement of regulatory structure, procedures and use.

Virginia Waste Management Board Members  
May 3, 2022

Specific changes to regulatory language that were made as a result of comments received during the proposed regulatory stage are listed in detail on the attached Final Regulation Agency Background Document (TH-03).

**VI. Staff Recommendation**

After making a presentation on the proposed amendment and answering any questions the Board may have, staff will ask the Board to adopt 9VAC20-121 et seq. as a final regulation.

**VII. Contact Information**

Kathryn Perszyk, Director, Land Protection and Revitalization Division  
(804) 698-4047  
Kathryn.Perszyk@deq.virginia.gov

**I. Attachments**

- Final Regulation Agency Background Document (TH-03)
- Economic Impact Assessment and Spreadsheet
- Project 5395, Amendment 3 (9VAC20-121 et seq.), Final Regulatory Text



[townhall.virginia.gov](http://townhall.virginia.gov)

## Final Regulation Agency Background Document

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-120(repeal) 9VAC20-121(new)
<b>VAC Chapter title(s)</b>	Regulated Medical Waste Management Regulations
<b>Action title</b>	Amendment 3
<b>Date this document prepared</b>	September 21, 2022

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Order 19 (2022) (EO 19), any instructions or procedures issued by the Office of Regulatory Management (ORM) or the Department of Planning and Budget (DPB) pursuant to EO 19, the Regulations for Filing and Publishing Agency Regulations (1 VAC 7-10), and the *Form and Style Requirements for the Virginia Register of Regulations and Virginia Administrative Code*.

### Brief Summary

*Provide a brief summary (preferably no more than 2 or 3 paragraphs) of this regulatory change (i.e., new regulation, amendments to an existing regulation, or repeal of an existing regulation). Alert the reader to all substantive matters. If applicable, generally describe the existing regulation.*

The Regulated Medical Waste Management Regulations, 9VAC20-120, establish standards and procedures pertaining to regulated medical waste (RMW) management, including permit requirements for the storage, transfer, treatment and disposal of RMW. Rules for packaging, labeling and transporting RMW, as well as exemptions from regulation, are also included. Standards for approved treatment processes are provided as well as provisions for establishing alternate treatment technologies.

The purpose of this amendment is to streamline and clarify the requirements and modernize the standards for general handling and treatment of RMW based on current industry best management practices. This amendment includes a significant reorganization of the regulations; therefore, as it would be too cumbersome to do this as a revision, the decision was made to repeal Chapter 120 and to replace it with a new chapter, Chapter 121. This amendment clarifies the requirements for generators and permitted facilities, improves permitting procedures, includes best management practices for Category A

Waste, and streamlines the regulations for ease of use while still protecting natural resources and human health.

## Acronyms and Definitions

*Define all acronyms used in this form, and any technical terms that are not also defined in the “Definitions” section of the regulation.*

---

“DCLS” means the Division of Consolidated Laboratory Services.

“EPA” means the U.S. Environmental Protection Agency.

“FDA” means the Food & Drug Administration.

“DPOR” means the Department of Professional and Occupational Regulation.

“PBR” means Permit by Rule.

“RAP” means a Regulatory Advisory Panel.

“RMW” means Regulated Medical Waste.

“SWIA” means Solid Waste Information and Assessment.

“US DOT” means the U.S. Department of Transportation.

“VDACS” means the Virginia Department of Agriculture and Consumer Services.

“VDH” means the Virginia Department of Health.

“WMFO” means the Waste Management Facility Operator.

## Statement of Final Agency Action

*Provide a statement of the final action taken by the agency including: 1) the date the action was taken; 2) the name of the agency taking the action; and 3) the title of the regulation.*

---

At the October 28, 2022, Board meeting the Virginia Waste Management Board took final action to adopt a new Regulated Medical Waste Management Regulation (9VAC20-121) and to repeal the existing Regulated Waste Management Regulation (9VAC20-120). The regulatory action is to be effective as provided in the Administrative Process Act.

## Mandate and Impetus

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding the mandate for this regulatory change, and any other impetus that specifically prompted its initiation. If there are no changes to previously reported information, include a specific statement to that effect.*

---

There are no changes to the mandate for this regulation.

## Legal Basis

*Identify (1) the promulgating agency, and (2) the state and/or federal legal authority for the regulatory change, including the most relevant citations to the Code of Virginia and Acts of Assembly chapter number(s), if applicable. Your citation must include a specific provision, if any, authorizing the promulgating agency to regulate this specific subject or program, as well as a reference to the agency's overall regulatory authority.*

---

The promulgating agency for this regulation is the Virginia Waste Management Board.

The legal basis for this regulation is the Virginia Waste Management Act (Chapter 14 of Title 10.1 of the Code of Virginia). Specifically, §10.1-1402 of the Code of Virginia authorizes the Board to supervise and control waste management activities in the Commonwealth and to promulgate regulations necessary to carry out its powers and duties.

## Purpose

*Explain the need for the regulatory change, including a description of: (1) the rationale or justification, (2) the specific reasons the regulatory change is essential to protect the health, safety, or welfare of citizens, and (3) the goals of the regulatory change and the problems it is intended to solve.*

---

The purpose of this amendment is to modernize the standards for general handling and treatment of RMW based on current industry best management practices. This regulatory action is necessary in order to update the requirements for RMW transfer stations and RMW treatment facilities, provide clarity for the regulated universe, remove redundancies, and eliminate overlap with other regulations. The goals of this amendment are to clarify the requirements for generators and permitted facilities, improve permitting procedures, and streamline the regulations for ease of use while still protecting the health, safety, and welfare of citizens. Proposed validation and operating parameters for treatment technologies were evaluated during the regulatory development phase.

## Substance

*Briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the "Detail of Changes" section below.*

---

These regulations are for the general handling, storage, transfer, treatment, and disposal of regulated medical waste. Rules for packaging, labeling and transporting RMW, as well as exemptions from regulation, are also included. Additional substantive revisions include:

- Providing conditional exemptions to encourage safe collection and proper management of specific types of regulated medical waste, such as sharps;
- Clarifying RMW storage requirements for generators and permitted facilities;
- Streamlining the permit structure and clarifying activities exempt from permitting;
- Specifying the siting, design, operation, recordkeeping, and reporting requirements of RMW transfer stations and treatment facilities;

- Requiring validation and periodic challenge testing for treatment technologies;
- Clarifying procedures for the management of Category A wastes;
- Improving the alternate treatment technology petition process; and
- Overall improvement of regulatory structure, procedures, and use.

Currently, Virginia has 16 permitted regulated medical waste management facilities that have transfer stations or that treat regulated medical waste. Permitted facilities are listed in Attachment A (RMW Treatment Facilities) and Attachment B (RMW Transfer Stations).

### **Issues**

*Identify the issues associated with the regulatory change, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, include a specific statement to that effect.*

The primary advantage of this regulatory action is that the proposed regulation action will provide for clarity and certainty for the management and treatment of RMW. This is an advantage to the regulated community, the public, and the Commonwealth as proper management and treatment of RMW will provide protections for human health and the environment. In working with the Regulatory Advisory Panel (RAP) to develop the proposed regulations, the agency was careful to provide for greater clarity for those that implement the regulation. This proposed regulatory action should pose no disadvantages to the public or to the Commonwealth.

### **Requirements More Restrictive than Federal**

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding any requirement of the regulatory change which is more restrictive than applicable federal requirements. If there are no changes to previously reported information, include a specific statement to that effect.*

There are no analogous federal regulations for the management of this subset of solid waste.

### **Agencies, Localities, and Other Entities Particularly Affected**

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding any other state agencies, localities, or other entities that are particularly affected by the regulatory change. If there are no changes to previously reported information, include a specific statement to that effect.*

**Other State Agencies Particularly Affected**

Public universities and state agencies (e.g. VDACS) with RMW treatment units are considered particularly affected by the proposed amendments to the regulation. There may be minor impacts on the Virginia Department of Health (VDH) and the Division of Consolidated Laboratory Services (DCLS) as potential generators of RMW. No other state agencies are known to be particularly impacted by these regulations. A listing of permitted RMW treatment facilities is attached (Attachment A).

**Localities Particularly Affected**

No localities are known to be particularly impacted by these regulations. Localities will continue to have a role in local zoning decisions regarding siting of RMW transfer stations and treatment facilities.

**Other Entities Particularly Affected**

RMW generators, RMW transfer stations, and RMW treatment facilities located in the Commonwealth are considered particularly affected by the proposed amendments to the regulation. However, as the regulations clarify the requirements, it is hoped that the proposed amendment will help generators and facilities that manage RMW to more easily find the requirements that apply to them and to have a better understanding of the requirements that they must adhere to regarding RMW.

**Periodic Review and Small Business Impact Review Report of Findings**

*If you are using this form to report the result of a periodic review/small business impact review that is being conducted as part of this regulatory action, and was announced during the NOIRA stage, indicate whether the regulatory change meets the criteria set out in EO 19 and the ORM procedures, e.g., is necessary for the protection of public health, safety, and welfare; minimizes the economic impact on small businesses consistent with the stated objectives of applicable law; and is clearly written and easily understandable. In addition, as required by § 2.2-4007.1 E and F of the Code of Virginia, discuss the agency’s consideration of: (1) the continued need for the regulation; (2) the nature of complaints or comments received concerning the regulation; (3) the complexity of the regulation; (4) the extent to which the regulation overlaps, duplicates, or conflicts with federal or state law or regulation; and (5) the length of time since the regulation has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the regulation. Also, discuss why the agency’s decision, consistent with applicable law, will minimize the economic impact of regulations on small businesses.*

As part of the NOIRA, comments on a periodic review/small business impact review were requested to include information on whether the regulation: (i) is necessary for the protection of public health, safety, and welfare or for the economic performance of important governmental functions; (ii) minimizes the economic impact on small businesses in a manner consistent with the stated objectives of applicable law; (iii) designed to achieve its intended objective in the most efficient, cost-effective manner; (iv) is clearly written and easily understandable; (v) overlaps, duplicates, or conflicts with federal or state law or regulation; and (vi) technology, economic conditions, or other factors have changed in the area affected by the regulation since the last review.

As part of this amendment, the Board has considered: (1) the continued need for the regulation; (2) the nature of complaints or comments received concerning the regulation from the public; (3) the complexity of the regulation; (4) the extent to which the regulation overlaps, duplicates, or conflicts with federal or state law or regulation; and (5) the length of time since the regulation has been evaluated or the degree to which the technology, economic conditions, or other factors have changed in the area affected by the regulation. An update to the RMW protocols is necessary as this regulation has not been through a full process revision since 2001/2002. The RWM regulations are still needed but do require updates to reduce the complexity of the regulation, to clarify the regulation, and to include the latest best management practices for RMW.

Based on the periodic review/small business comments received and the NOIRA comments received, an amendment of this regulation is necessary to address these comments. This amendment will attempt to address the issues raised and to provide a more cohesive, clearer, cost-effective and protective regulation for the management of RMW. Comments received and the recommendations accepted and taken under consideration during the drafting of the regulation are listed below.

Commenter	Factor	Comment
<p>Cara Simaga, Stericycle</p>	<p>(i) is necessary for the protection of public health, safety, and welfare or for the economical performance of important governmental functions;</p>	<p>The regulation is necessary for the protection of public health, safety, and welfare. Though the collection and management of RMW is not regulated at a federal level, almost all states have regulations to manage this waste stream. Many of those states have expanded on what is covered under their RMW regulations to include waste streams like pathological wastes, trace chemotherapy wastes, and non-RCRA pharmaceutical waste and we would encourage the Department to do the same. We would also recommend adding sections to the regulation regarding the management of wastes that are considered Category A infectious substances per DOT regulations. An example would be waste from patients with Ebola. Stericycle was involved in collection and management of Ebola patient waste in 2014 and we encourage all states to consider Category A wastes and potential situations generating these wastes in their regulations.</p>
	<p>(ii) minimizes the economic impact on small businesses in a manner consistent with the stated objectives of applicable law;</p>	<p>We would disagree that the current regulation minimizes economic impact on small businesses. Making appropriate modifications to the regulations would however have a potentially minimizing effect on economic impact on small businesses. Though we are not a small business, we service customers/generators that are and some of the current regulation requirements increase our cost to do business, which can affect even small generators. Some parts of the regulation that impact us negatively include:</p> <ul style="list-style-type: none"> <li>i. The numerous requirements for RMW transfer sites, including the requirement to be permitted if waste is stored on a trailer for more than 24 hours.</li> <li>ii. The requirement to refrigerate waste after 7 days of storage.</li> <li>iii. The requirement to shred treated RMW before landfilling.</li> </ul>
	<p>(iii) is designed to achieve its intended objective in the most efficient, cost-effective manner;</p>	<p>We have stated some of the reasons why we disagree that the current regulation is efficient and cost-effective above in (ii) but would like to include the following points as they have impacts on larger generators such as hospitals:</p> <ul style="list-style-type: none"> <li>i. Many generators of large amounts of waste prefer the use of roll-off containers for storage and management of their wastes, however, due to the current storage regulations, these containers must be removed every 7 days, even if they are not full. This results in additional cost for the healthcare facilities.</li> <li>ii. The limit on storage of RMW being only 200 gallons of waste; otherwise a permit is needed. This is an unclear requirement and is not a common way that waste storage is identified and managed in regulation. The 200 gallon</li> </ul>

Commenter	Factor	Comment
		limit seems arbitrary as this is not an amount referenced in other regulations.
	(iv) is clearly written and easily understandable;	The regulations are similar to other state regulations in that they reference solid waste regulations. It is understood that there is need to reference some solid waste regulations, but, the Department should consider creating one section for RMW regulations that contains all needed information, avoiding cross-references to solid waste regulations as much as possible, to make the regulations clear and easy to understand and comply with. We would also encourage limiting cross-referencing within the RMW regulation itself. We have included an attachment to these comments that lays out a proposed outline for how the regulations could be structured in order to avoid cross-referencing and to promote clarity on what parts apply to each regulated entity. These suggestions will assist the regulated community – generators, transporters, and treatment facilities, in understanding and compliance by providing all needed information in one clear and concise regulation.
	(v) overlaps, duplicates, or conflicts with federal or state law or regulation;	We appreciate that the regulations generally do not conflict with federal or state laws or regulations, especially DOT. However, we would like to point out two places where some conflict and/or confusion could occur: i. The definition of “Etiologic Agents” references 42 CFR 72.3. This section of federal regulation no longer exists. If the Department wants to include a definition for similar agents, perhaps include 42 CFR Part 73 on Select Agents and Toxins. ii. Parts of the regulation seem to pull from the federal Environmental Protection Agency’s (EPA) hazardous waste regulations. For example, the terms “listed” and “characteristic” are used at times. These are terms used to define hazardous wastes that are found on lists (U, P, F, and K lists) and/or exhibit hazardous waste characteristics (ignitability, corrosivity, reactivity, toxicity). We would recommend not using the terms “listed” or “characteristic” in defining RMW.
	(vi) is impacted by changes in technology, economic conditions, or other factors in the area affected by the regulation since the last review.	We believe that changes in the industry and advancement of practices and technology merit changes in the regulations.
Anne Germain, Healthcare Waste Institute, National Waste & Recycling Association		The Healthcare Waste Institute (HWI) of the National Waste & Recycling Association (NWRA) represents suppliers and service providers in the healthcare waste industry both in Virginia and on a national basis. We offer the follow with respect to the NOIRA on Virginia’s regulated medical waste (RMW) regulations: 1. Regulations governing RMW are necessary to protect the public health, safety and welfare. Appropriate

Commenter	Factor	Comment
		<p>management of RMW ensures that it does not create a public health risk.</p> <p>2. Should Virginia adopt regulations with reasonable changes, these regulations could benefit small businesses such as smaller healthcare facilities by providing potential costs savings and reducing compliance risk.</p> <p>3. The current regulations are outdated, confusing and conflict with other regulations.</p> <p>Therefore, we support making updates to the rule to make them more clear and easier to understand.</p>

**Public Comment**

*Summarize all comments received during the public comment period following the publication of the previous stage, and provide the agency’s response. Include all comments submitted: including those received on Town Hall, in a public hearing, or submitted directly to the agency. If no comment was received, enter a specific statement to that effect.*

Commenter	Comment	Agency response
Bryce Lindley, Staunton, VA	<p>My concern after reviewing the revised regulations is that the regulations were revised by a Regulatory Advisory Panel (RAP) that may have been encompassed of individuals that may gain personal benefit from the regulations as written (potentially in violation of § 2.2-3103. Prohibited conduct). This panel, if it is the same as the one listed at <a href="https://www.dpor.virginia.gov/Boards/WMFO/">https://www.dpor.virginia.gov/Boards/WMFO/</a>, seems to be designed to have a perception of a Conflict of Interest. Though I believe that the Board of Waste Management meant to just get advice from select members of the community, they may be getting advice from individuals that may receive direct or indirect compensation for the prevalence of off-site treatment and transportation of waste and/or direct or indirect compensation for providing training to local businesses for the Waste Management Facility Operator license.</p> <p><i>§ 54.1-2210. Board for Waste Management Facility Operators; membership; terms. The Board for Waste Management Facility Operators shall consist of seven members appointed by the Governor as follows: a representative from the Department of Environmental Quality, a representative from a local government that owns a sanitary landfill, a representative from a local government that owns a waste management facility other than a sanitary landfill, a representative of a private owner of a sanitary landfill, a representative of a private owner of a waste management facility other than a sanitary landfill, and two citizen</i></p>	<p>Per 9VAC20-11-70 B of the Public Participation Guidelines regulation, the agency shall determine when a regulatory advisory panel (RAP) shall be appointed and the composition of the RAP. The agency director determines who is appointed to the RAP based on professional specialization or technical assistance per 9VAC20-11-70 A. Anyone may ask to be appointed to the RAP, but appointment is not guaranteed and is at the pleasure of the agency director. The Regulatory Advisory Panel for this regulatory amendment, the Board for Waste Management Facility Operators, and the Virginia Waste Management Board are three different entities. No change has been made to the regulation in</p>

	<p><i>members, one of whom shall be a representative of a commercial waste generator. No owner shall be represented by more than one representative or employee. The terms of Board members shall be four years, except that vacancies shall be filled for the unexpired term. No member shall serve more than two consecutive four-year terms.</i></p> <p>I hope that after reading the below, the Board of Waste Management makes the appropriate amendments to the revised regulations to ensure that the regulations make sense, and that any Board decisions do not advance the perception of a conflict of interest.</p>	<p>response to this comment.</p>
<p>Bryce Lindley, Staunton, VA</p>	<p>The new regulations seem arbitrary and capricious, and are above and beyond industry standard. I would like to see certain regulations changed to ensure that any and all infectious waste is treated at its source, per industry best practice, to prevent its dangerous reintroduction back into our communities. I would think that the average citizen of Virginia would prefer the same.</p> <p>Numerous Federal agencies have defined or tried to define regulated medical waste. The EPA states, "Medical waste is a subset of wastes generated at health care facilities, such as hospitals, physicians' offices, dental practices, blood banks, and veterinary hospitals/clinics, as well as medical research facilities and laboratories. Generally, medical waste is healthcare waste that that may be contaminated by blood, body fluids or other potentially infectious materials and is often referred to as regulated medical waste." The CDC states that certain medical waste should be targeted for proper waste disposal processes - "Health-care facility medical wastes targeted for handling and disposal precautions include microbiology laboratory waste (e.g., microbiologic cultures and stocks of microorganisms), pathology and anatomy waste, blood specimens from clinics and laboratories, blood products, and other body-fluid specimens.<sup>2</sup> Moreover, the risk of either injury or infection from certain sharp items (e.g., needles and scalpel blades) contaminated with blood also must be considered." Medical waste is primarily regulated by state environmental and health departments. EPA has not had authority, specifically for medical waste, since the Medical Waste Tracking Act (MWTa) of 1988 expired in 1991. As such, the state of Virginia's Waste Management Board is trying to revise its regulations to try to provide a safe environment for its populace. Best practices guidelines state that on-site treatment is preferred<sup>1</sup>. On-site treatment decreases the chance that infectious waste gets re-introduced into the community. On-site treatment, generally performed and supervised by the industry experts – medical professionals – that are already mandated to comply</p>	<p>The Board appreciates the comment, but determines that the general permitting and operational requirements for onsite treatment of regulated medical waste as written in the proposed regulations are necessary to protect the health, safety and welfare of the public. No change has been made to the regulation in response to this comment.</p> <p>Portions of this comment relating to operator licensing and pre-treatment vacuum requirements are consistent with the next two comments, which have been addressed separately.</p>

	<p>with Federal OSHA Blood Born Pathogen Standards (29 CFR 1910.1030) and the Federal DOT regulations (49 CFR § 173.197) governing such wastes – do not need additional state regulations that try to prevent hospitals from completing their missions - to participate in activities to protect and promote the health of the public. The regulations, as currently written, heavily deter onsite treatment. Not only do the regulations require hospitals to get a license to operate an on-site waste treatment system, they include an odd, never before seen, triple stage pre-vacuum requirement for steam sterilization. I fear that certain parts of these regulations may have been written in this fashion with malicious intent. By deterring on-site treatment, facilities will be required to transport their waste off site, and be forced to pay 3 to 5 times more for waste disposal. Municipal solid waste usually costs a facility less than \$0.10 per pound to dispose. Regulated medical waste that requires off site treatment and transport can be charged as much as \$0.80 per pound. The average cost of on-site RMW treatment system averages \$0.07 to \$0.11 per pound, saving the facilities from \$0.22 to \$0.60 per pound. These cost savings only increase the longer the on-site treatment system is used and the more waste that is treated. At a facility where the RMW poundage can be 2,826,560 lbs per year the facility will need to spend approximately \$490,000 per year for off-site waste disposal versus \$87,000 per year for an on-site waste treatment system. This is an added \$403,000 per year that a hospital in a pandemic should not be forced to pay!</p>	
<p>Bryce Lindley, Staunton, VA</p>	<p>Virginia is the ONLY state in the U.S. that requires hospitals to have a license to run a commercial incinerator or autoclave (Class III), per 9VAC20-121-300. This license is expensive, very hard to attain, requires education in equipment that the hospital will not be using (incinerators), and it requires the employees to leave the hospital facility during a pandemic to try to attain this “privilege”. The Board of Waste Management excluded certain treatment systems from this license requirement, but seemed to fail to take into consideration all available treatment systems and the ramifications of requiring certain industries and easily operated systems in the licensing requirement.</p> <p>The definition of a commercial incinerator or autoclave cannot be found by the average person because the Department of Professional and Occupational Regulation isn’t capable of even keeping its website updated. The link found at <a href="#">[DPOR’s Waste Management Facility Operator Candidate Information Bulletin]</a> to the “training materials’ is not available.</p> <p>Some of the listed entities that the Board claims are to provide training are no longer in business or</p>	<p>Industrial and domestic sewage discharges are regulated under other laws and regulations. Solid waste incinerators, thermal treatment facilities, and waste to energy facilities require a solid waste management facility permit under the Virginia Solid Waste Management Regulations, 9VAC20-81, and solid waste management facilities are required to operate under the supervision of a licensed WMFO as required by §10.1-1408.2 of the Code of Virginia. The requirement for the facility to be operated by a licensed waste management facility</p>

	<p>no longer offer the training. There is only one company still claiming to provide such training. Hospitals cannot afford to lose one employee during a pandemic, much less lose an employee for days on training for easily attained information. Manufacturers of needed equipment will come on sight to ensure that operators know how to operate their systems and will provide industry standard training.</p> <p>The Class III license also includes training for incinerators. Not only is there not a single incinerator in operation at a hospital in the state of Virginia, but why should a hospital know how to operate a system that they aren't using? These superfluous requirements do not seem justified or reasonable.</p> <p>The revised regulations added a new definition just for generators that treat their own waste on site - captive regulated medical waste management facilities; and as such, can easily exempt these specially defined facilities. The revised regulations have already proven that certain treatment systems can be exempted – the RAP board exempted treatment systems used to treat industrial or domestic sewage discharges, and permitted solid waste incinerators, thermal treatments, or waste to energy facilities with combustion of up to 10% by weight of regulated medical waste under 9VAC20-121-300(E.). By exempting these systems, the Board has proven that some systems can and should be exempted from this permit process. The Attorney General also verified that the Board has the authority to amend its regulations (per Christopher E. Bergin, Jr.'s letter dated December 19, 2019). The Board can ensure that these same facilities are still safely treating on-site by re-instituting 9VAC20-120-1000 - Operator Training.</p>	<p>operator (WMFO) is a statutory requirement (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly. In addition, 18VAC155-20-110.A.3 of the Department of Professional and Occupational Regulation's WMFO Regulations (which is not part of this regulatory amendment) requires individuals operating a facility regulated under the Regulated Medical Waste Management Regulations to hold a Class III license. State law does not provide DEQ or the Virginia Waste Management Board with the authority to revise licensing criteria or examination procedures for waste management facility operators. Under §54.1-2211 of the Code of Virginia, the Board for Waste Management Facility Operators promulgates regulations and standards for the training and licensing of operators. The Board for WMFO also approves training providers. No change has been made to the regulation in response to this comment.</p>
<p>Bryce Lindley, Staunton, VA</p>	<p>9VAC20-121-240 (C.)(3.) requires a vacuum autoclave to fully evacuate the air three times. Why does a pre-vacuum sterilizer require a minimum of three cycles? This isn't found in any other regulation or description in the U.S. What scientific reason was used to include a three-cycle pre-vacuum stage? Some autoclaves, such as a Tuttnauer, state that they have pulses of vacuum<sup>2</sup>, but I've never seen a 3-cycle vacuum stage. This</p>	<p>Pulling multiple vacuums prior to the residence phase of the treatment cycle conditions the waste and its packaging to ensure that all portions of the waste in the treatment unit receive</p>

	<p>regulation needs to be amended, as it seems to refer to a type of sterilization system that does not exist.            9VAC20-121-240 (C.)(3.) <i>For vacuum autoclaves, pre-vacuum cycles shall be conducted such that all system air is fully evacuated a minimum of three times at the beginning of each treatment cycle and held with all air evacuated to ensure adequate steam exposure throughout the waste.</i></p>	<p>adequate steam exposure. Adequate steam exposure ensures that minimum temperatures necessary for effective treatment are achieved in all portions of the waste in the treatment unit. The text has been revised to require a minimum of two pre-vacuums, unless based on the results of validation testing additional vacuum is needed for certain waste or packaging types.</p>
<p>Bryce Lindley, Staunton, VA</p>	<p>Easy solutions exist to correct these regulation errors – the Board can delete the minimum 3 times for the pre-vacuum cycle from 9VAC20-121-240 (C.)(3.), exempt captive regulated medical waste management facilities or on-site regulated medical waste treatment systems that treat less than 500 pounds per load from a license requirement under 9VAC20-121-300, and remove individuals from the Board or RAP that create a perception of a conflict of interest.</p>	<p>The Board appreciates the comment, but determines that the general permitting and operational requirements for onsite treatment of regulated medical waste as written in the proposed regulations are necessary to protect the health, safety and welfare of the public. No change has been made to the regulation in response to this part of the comment.</p> <p>Portions of this comment relating to pre-treatment vacuum requirements, operator licensing, and RAP membership are consistent with previous comments, which have been addressed separately.</p>
<p>Bryce Lindley, Staunton, VA</p>	<p>My final “fear” is that the regulations could be considered so capricious and expensive that healthcare professionals could bypass the regulations all together by claiming that none of their waste is capable of producing an infectious disease in humans. As 9VAC20-121-90 gives them the legal means to do this – by allowing them to make the ultimate decision as to what they “suspect” might produce an infectious disease – they could in essence decrease their expenses by claiming that 100% of their waste is non-infectious and just municipal waste.</p>	<p>Even if a solid waste is not suspected by the health care professional in charge of being capable of producing an infectious disease in humans, the waste is still regulated medical waste if it is identified in the list of wastes under 9VAC20-121-90 B 2, unless specifically excluded or exempted by subsection</p>

		C or D of 9VAC20-121-90. No change has been made to the regulation in response to this comment.
<p>Marianna Denny, Fauquier County Environmental Services</p>	<p><b>Response to RMW changes, specifically home sharps</b>                  Fauquier County Environmental Services will be negatively impacted by proposed changes to the Regulated Medical Waste Management chapter of the Virginia Administrative Code, specifically proposed additions contained in 9VAC20-121-10 “Definitions,” 9VAC20-121-90 “Identification of regulated medical waste” and 9VAC20-121-300 “Applicability.”                  In September 2018, Fauquier County Environmental Services began implementation of a home sharps collection program, with approval from DEQ Northern Region staff and the local office of the Virginia Department of Health. This program was conceived due to repeated sharps injuries within County staff, particularly recycling sorting staff, caused by improperly disposed home sharps in recycling material at the County’s residential recycling facility.                  The program is designed to provide a convenient and accessible way for Fauquier County residents to dispose of home sharps in a safe manner, and keep them out of the larger waste and recycling stream. In order for the program to be affordable to the County, and to prevent an increased financial burden to County taxpayers, the resulting home sharps were allowed by DEQ to be disposed of directly into the working face of Fauquier County’s sanitary MSW landfill, PN 575.                  The collection and disposal of home sharps is carried out in an organized and safe fashion, with program specifics previously approved by DEQ. Fauquier County Environmental Services has also developed and implemented a department-specific Exposure Control Plan in consultation with Katherine West, BSN, MEd, CIC. We are only collecting home sharps directly from only Fauquier County residents at our facilities, and in-person screening of each deposit (required by the program) allows us to be certain we are not accepting sharps from business entities. After implementation of the sharps collection program in late 2018, sharps injuries among Environmental Services staff dropped by 50% in 2019, and to zero in 2020. In 2021, Environmental Services had only one possible sharps-related injury, the specific source of injury being undetermined, and there have been zero sharps-related injuries in 2022 to date. There have been no reported hazards to staff or the public related to disposal of collected home sharps in the sanitary landfill’s working face.                  Under the proposed additions to the regulations, there is a newly defined “sharps drop box” in the proposed</p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>

	<p>9VAC20-121-10 "Definitions", which is "a secure, tamper-proof sharps container for the temporary storage of only household sharps provided for the convenience of individual home generators who choose to transport their own household sharps to the collection point and where collected sharps are packaged, labeled, and managed as regulated medical waste." Under this definition, the residential collection points operated by Fauquier County Environmental Services would be defined as sharps drop boxes. We have no objection to this definition, save for the last line "where collected sharps are packaged, labeled and managed as regulated medical waste." This line of the proposed regulation would negatively impact our program, as it would trigger all other requirements of the regulated medical waste regulations in regard to our collection, transport and disposal of home sharps.</p>	
<p>Marianna Denny, Fauquier County Environmental Services</p>	<p>The proposed draft of 9VAC20-121-90 "Identification of regulated medical waste" also negatively impacts our program. Previously, home sharps were largely exempt from regulation. Under this draft of 9VAC20-121-90, both subsection B.2.d. ("This also includes sharps generated through veterinary practice, acupuncture needles, and household sharps collected in a sharps drop box") and D.2. ("Household sharps centrally collected in a sharps drop box shall be managed as regulated medical waste in accordance with 9VAC20-121-300 E 1") home sharps collected in a sharps drop box are specifically designated as regulated medical waste, triggering the requirements outlined in the proposed 9VAC20-121-300 "Applicability."</p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Marianna Denny, Fauquier County Environmental Services</p>	<p>The proposed draft of 9VAC20-121-300 "Applicability" also negatively impacts our program. Under 9VAC20-121-300 E.1.a-c, we may collect home sharps in a sharps drop box at our residential collection facilities, but "must comply with the general handling, packaging and labeling, storage, reusable container, spill cleanup, transportation, and Category A waste management requirements for regulated medical waste outlined in Part III (9VAC20-121-100 et seq.) of this chapter," with the further restriction in that same subsection that "Collected sharps shall be treated or disposed of as regulated medical waste in accordance with this chapter. Untreated sharps shall not be recycled or disposed of in a solid waste landfill or other solid waste management facility."</p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Marianna Denny, Fauquier County Environmental Services</p>	<p>The proposed regulations as outlined above will effectively eliminate Fauquier County Environmental Services' ability to continue operating our home sharps collection program. It will no longer be financially viable, and will place an undue burden on the County's taxpayers as it would require a significant budget increase to comply with the new requirements. This program has been highly successful in providing a needed resource for residents in a largely rural area</p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made</p>

	<p>with few options for safe home sharps disposal. It has been very effective in reducing sharps injuries amongst our staff.</p> <p>We believe that our system as currently operating is no less protective of human health and the environment than residents legally disposing of individual or packaged home sharps mixed in household solid wastes. In actuality, we feel that our system is more protective, as we ensure that home sharps are directly disposed of in our landfill's working face using specific safety procedures, rather than having household sharps interspersed in waste that is collected by widely varying methods, dumped on our MSW transfer station tipping floor, and shipped out to another landfill via public roads. In the view of Fauquier County Environmental Services, this regulatory change will only serve to increase health and safety risks to our staff and others, as unmanaged home sharps are highly likely to be improperly and unsafely disposed. We would propose several options for changes to the draft regulations in question:</p> <ol style="list-style-type: none"> <li>1. Create a separate category for a permitted solid waste facility that would allow it to directly operate sharps drop boxes at such facilities, with the caveat that only home sharps would be disposed of in the associated permitted facility. This should include a permitted sanitary landfill, but could be expanded to include a permitted MSW transfer station should DEQ agree. Our program would not be affected by this expansion, but we can see the potential utility of this for other localities.</li> <li>2. Eliminate or modify the last line of 9VAC20-121-300 E.1.c. that states "Untreated sharps shall not be recycled or disposed of in a solid waste landfill or other solid waste management facility," to allow for disposal of home sharps as outlined in the previous bullet point.</li> <li>3. Provide for a process to apply for an exemption or variance to the proposed regulation that would allow Fauquier County Environmental services or other localities to obtain said exemption/variance, if we are able to show a significant benefit to public health and access to needed services, combined with little to no risk to health or the environment.</li> </ol>	<p>in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-10.</b> The definition of "autoclave" is incorrect. Consistent with the definition of "autoclave" in other states, the definition should not include the term "sterilization." Autoclaving is not intended to achieve sterile conditions; rather it renders materials noninfectious through steam at high temperature and pressure.</p> <p>Stericycle proposed text: "Autoclave" means a wet thermal <del>sterilization</del> process that uses saturated steam under a specified amount of pressure for a specified exposure time and at a specific temperature.</p>	<p>The Board agrees with this comment, and the text has been revised to remove the word "sterilization" and replace it with the word "treatment."</p>

<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-10.</b> Although Stericycle makes best efforts to use EPA-registered disinfectants, they are not always readily available (such as during public health crises like the COVID-19 pandemic). Stericycle requests that DEQ remove the language requiring use of an EPA registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available. Stericycle proposed text: "Disinfection" means any procedure that involves the application of an antimicrobial agent (disinfectant) <del>registered with EPA that is consistent with its approved use in accordance with</del> the manufacturer's instructions. Disinfection shall not be considered a form of treatment, and appropriate handling of disinfected materials, as well as health and safety precautions, shall still be required to achieve protection of public health and the environment.</p>	<p>The Environmental Protection Agency (EPA) and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered "hospital grade" disinfectants. In March 2020, EPA introduced a temporary regulatory amendment to address supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No changes have been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-10.</b> Pharmaceutical waste should be removed from the definition of "unauthorized waste." Incineration at a hospital, medical, and infectious waste incinerator (HMIWI) is a strongly recommended treatment option for non-hazardous pharmaceutical waste. Allowing customers to make use of this</p>	<p>The Board agrees that pharmaceutical waste, trace chemotherapeutic waste, and pathological waste may not be considered unauthorized</p>

	<p>technology reduces the likelihood that pharmaceutical waste will be sewerred, a practice that can increase the presence of harmful chemicals in drinking water. Trace chemotherapeutic wastes (such as contaminated gloves), and pathological wastes (such as human tissue) are considered medical waste in many jurisdictions, and are routinely handled by medical waste treatment facilities today. If medical waste treatment facilities are prohibited from accepting these wastes, healthcare facilities may face difficulty in identifying suitable vendors for that waste stream. Stericycle proposed text: "Unauthorized waste" means waste that is not authorized by the department to be managed by a regulated medical waste management facility. Examples are dependent upon the treatment technology and permit but may include <del>chemotherapeutic, pathological, pharmaceutical,</del> radioactive, chemical, hazardous, or other wastes.</p>	<p>waste across the board at all regulated medical waste management facilities. However, it is possible for each of these waste types to be an example of unauthorized waste at a particular regulated medical waste facility based on the facility's site-specific treatment technology and permit. The definition has been clarified to emphasize that examples of unauthorized waste may vary from site to site.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-40(B).</b> Facilities with existing permits should not be required to submit new permit applications within six months after the new regulations take effect. Rather, existing facilities should be required to demonstrate compliance by the time that their existing permits come up for renewal. This change would ease the regulatory burden of the new regulations, better accord with expectations of regulated parties who may not be required to renew their permits for several more years, and more evenly spread DEQ's workload in that it will not be flooded with unnecessary or duplicative permit applications immediately following finalization of the proposed rule. Stericycle proposed text: All existing regulated medical waste management facilities must comply with this chapter. <del>Existing facilities, including those with an existing permit, must demonstrate compliance submit a complete permit application (insert date six months after the effective date of this regulation) to come into compliance with this chapter. by their next permit renewal date.</del></p>	<p>The time frame for existing facilities to submit updated permit applications to come into compliance with the new regulations has been extended from 6 months to 18 months. The regulatory text has also been revised to clarify that permit applications for existing facilities will not need to include public participation unless the updated application includes changes that result in a different type of facility (e.g. change from transfer to treatment facility or change from captive to non-captive facility). As part of this amendment, the permit procedures for all types of facilities have been made more consistent, and the regulation no longer distinguishes "on-site" PBRs from "offsite" PBRs. In addition, on-site PBRs did not previously require a 10-year renewal. Therefore a set timeframe for submittal of PBR applications by all existing facilities has been outlined in the</p>

		<p>regulation. The Board agrees that a six month time frame may be impractical or difficult for facilities; therefore the timeframe for submittal of the application is extended to 18 months. The extended time frame will also allow DEQ time to provide training and compliance assistance.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-90(C)(8).</b> The proposed language is overly broad. Stericycle recommends adding language to clarify that not all used health care products and “contaminated” medical devices or equipment are regulated as medical wastes, but rather only those that meet the specific criteria for the identification of RMW laid out in 9VAC20-121-90(B). Stericycle proposed text: The following materials are not solid wastes or regulated medical wastes . . . 8. Used health care products and reusable medical devices, being returned to a manufacturer or third party for reprocessing (cleaning and disinfecting or sterilizing) and reuse if packaged and labeled in accordance with 49 CFR 173.134(b)(12)(ii)(A) through (D) and reprocessed in accordance with applicable U.S. Food and Drug Administration requirements. Used health care products and contaminated medical devices or equipment <u>that meet either of the two criteria of 9VAC20- 121-90(B)</u> being sent offsite for recycling or disposal are regulated medical waste and shall be managed in accordance with this chapter. These items do not include reusable carts or containers used in the management of regulated medical waste, which shall be managed in accordance with 9VAC20-121-130.</p>	<p>The Board agrees with this comment, and the text has been clarified.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-90(C)(10).</b> Through the use of the word “shall,” this proposed regulation appears to <i>require</i> the disposal of paraffin blocks as solid waste, not as RMW. Stericycle requests that DEQ use permissive language, changing “shall” to “may,” to allow the incineration of paraffin blocks as RMW, which is a current common practice. Stericycle proposed text: The following materials are not solid wastes or regulated medical wastes: 10. Tissue blocks of organs or tissues (except those associated with prions) that have been fixed in paraffin or similar embedding materials for cytological or histological examinations. Once these items are no longer needed for their intended purpose, they <del>shall</del> may be managed as solid waste.</p>	<p>The Board agrees with this comment, and the text has been clarified.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-90(D)(1)(a).</b> The proposed language has the unintended consequence of prohibiting disposal of autoclave-treated RMW. Packaging remains intact</p>	<p>The Board agrees with the comment, and the text has been clarified.</p>

	<p>during autoclaving. For example, RMW that goes into an autoclave in a red bag will come out of the autoclave as treated waste, but still in the same red bag. This treated red bag waste is—and should be—disposed of as solid waste. To the extent the proposed regulation requires the waste to be packaged differently when it is removed from the autoclave because it has become “treated waste,” it is unworkable. The regulation should be clarified to prohibit <i>re</i>-packaging of treated waste as RMW or this provision should be deleted in its entirety.</p> <p>Stericycle proposed text: a. Treated waste that was once regulated but is no longer regulated medical waste shall not be <u>re</u>-packaged as regulated medical waste. <del>Solid waste packaged as regulated medical waste is regulated medical waste.</del></p>	
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-90(D)(2).</b> Stericycle supports this addition to the RMW regulations. In particular, Stericycle supports the treatment of home healthcare waste as RMW, as it reduces the likelihood that such items end up untreated in municipal sewers or landfills. Medical waste generated by health care professionals, including hospice care providers, can sometimes include pharmaceutical waste. Allowing home health care professionals to potentially utilize one service provider for all of these waste streams further helps facilitate proper disposal practices. (See also Stericycle's comments to proposed section 9VAC20-121-10, above).</p> <p>Stericycle proposed text: <del>The following solid wastes are not regulated medical wastes for purpose of this chapter: ...2. Household waste, including household sharps. A person shall not knowingly place household sharps waste in any container used for the collection of solid waste or recyclable materials. Household sharps waste shall be placed in an opaque, leak proof, puncture resistant container that is closed, and tightly sealed, and labeled for home use before being mixed with other solid wastes or disposed. Household sharps waste may be placed in U.S. Food and Drug Administration cleared sharps containers if specifically designed and labeled for home use. Household sharps containers shall be labeled HOUSEHOLD SHARPS—DO NOT RECYCLE" or "HOME GENERATED SHARPS—DO NOT RECYCLE" printed in large legible text and permanent ink. Household sharps centrally collected in a sharps drop box shall be managed as regulated medical waste in accordance with 9VAC20-121-300 E 1. Medical waste generated by a health care professional administering care in a household is regulated medical waste and must be managed in accordance with this chapter.</del></p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-100(B).</b> The generator is the entity that can safely segregate RMW. Segregation of RMW from other types of waste and by treatment method should</p>	<p>The Board agrees with part of the comment. The text has been clarified to</p>

	<p>be clearly identified as an obligation of the generator. The generator should have the option to comingle solid waste, such as personal protective equipment (PPE) and non-hazardous pharmaceuticals, with RMW, and to overmanage that waste as RMW.</p> <p>Stericycle proposed text: <u>All generators must identify and segregate Rregulated medical waste shall be identified and segregated from other waste, including radioactive waste, hazardous waste, and other solid waste, at the point of origin or as soon as practicable after generation, except that solid waste may be combined with regulated medical waste. If solid waste is combined with medical waste, it shall be managed as regulated medical waste. All generators must also segregate</u> <del>-If practical, regulated medical waste shall also be segregated</del> based on the anticipated treatment method.</p>	<p>emphasize that the generator is the entity responsible for identifying and segregating regulated medical waste.</p> <p>Regarding the remainder of the comment, the Board appreciates the suggestion, but determines that the remainder of the requirements as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. When a generator intends to over-manage solid waste as regulated medical waste, the solid waste shall be packaged as regulated medical waste. No change has been made in response to this part of the comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-110(B).</b> Stericycle supports this proposed provision. This language helps to clarify that generators are ultimately responsible for the packaging and labeling of RMW.</p> <p>Stericycle proposed text: <i>No changes – Stericycle supports this provision.</i></p>	<p>The Board thanks the commenter for their support.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-110(D)(5)(a).</b> The labeling of RMW is regulated by the US Department of Transportation (DOT), under its Hazardous Materials Regulations (HMR), 49 CFR Parts 171- 180, and the Occupational Safety and Health Administration (OSHA), under its bloodborne pathogens regulations, 29 CFR § 1910.1030. State regulations regarding the labeling of federally regulated materials are preempted if they are not “substantively the same” as the HMR. See 49 USC § 5125; 49 CFR § 171(f). To the extent that the requirements imposed by the proposed regulations are not “substantively the same” as the HMR, they are preempted, and should be deleted from the proposed regulations. Additionally, DEQ should remove the proposed labeling requirements as indicated because complying with a patchwork of state-by-state labeling requirements is costly, unnecessarily burdensome and inefficient. Moreover, RMW handlers should be given the flexibility to move away from traditional paper labels in order to improve both sustainability and efficiency (for example, by</p>	<p>The Board appreciates the suggestion, but determines that the requirements as written in the proposed regulations are sufficient to protect the health, safety, and welfare of the public. The labeling requirements as written are for onsite management of regulated medical waste prior to transport. Regulated medical waste must still be packaged and labeled in accordance with the US DOT Hazardous Materials Regulations in order to be transported. In addition, nothing in the</p>

	<p>transitioning to use of barcodes and other electronic means of tracking).                  Stericycle proposed text: All regulated medical waste packaging shall be labeled <u>in accordance with the U.S. Department of Transportation Hazardous Materials Regulations at 49 CFR Parts 171 through 180, as applicable, and 29 CFR 1910.1030. The label shall be securely attached to or printed on packaging. The label may be a tag or sticker securely affixed to the package. Permanent ink shall be used to complete the information on the label. The label and the information provided on the label must be clearly legible. The following information shall be included: a. The name, address, and business telephone number of the generator. For hospitals, the label shall identify the specific department or lab where the waste originated;</u></p>	<p>proposed regulation prevents the use of barcodes in addition to meeting the minimum labeling requirements for onsite management of regulated medical waste. No change has been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-120(D)(4).</b> Stericycle generally supports this proposed provision, however the language requiring records to be maintained in accordance with 9VAC20-121-340 should be removed as significant portions of 9VAC20-121- 340 are inapplicable to transfer facilities.                  Stericycle proposed text: All regulated medical waste shall be stored in accordance with the following timeframes: 4. Regulated medical waste transfer stations shall store unrefrigerated regulated medical waste onsite for no more than seven calendar days. All regulated medical waste stored for more than seven calendar days must be refrigerated and stored in an ambient temperature between 35°F and 45°F (2°C and 7°C). No regulated medical waste shall be stored onsite for more than a total of 15 calendar days.  <del>Records shall be maintained in accordance with 9VAC20-121-340.</del></p>	<p>While the Board agrees that 9VAC0-121-340 contains recordkeeping requirements for all types of facilities, transfer stations would only be required to maintain records associated with the types of activities performed on site, such as records associated with receiving and shipping waste materials. The term “as applicable” has been added to the regulatory text to clarify that facilities are responsible to maintain records as applicable for their type of operation.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-120(D)(5).</b> Stericycle recommends adding language that allows transfer stations and treatment facilities to track the length of time RMW is accumulated onsite by means of a “log.” This is a standard, accepted industry practice in Virginia and other states.                  Stericycle proposed text: All regulated medical waste shall be stored in accordance with the following timeframes: 5. Regulated medical waste transfer stations and treatment facilities shall clearly demonstrate the length of time that regulated medical waste is accumulated onsite by marking the outer packaging in permanent ink or maintaining an inventory, <u>log</u>, barcode, or other recordkeeping system.</p>	<p>The Board agrees with the comment, and the text has been clarified.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-140(B).</b> The proposed language regarding spill containment and cleanup kit requirements should be removed or amended. RMW handlers should be given the flexibility to tailor their</p>	<p>The Board appreciates the suggestion, but determines that the requirement as written in</p>

	<p>equipment and kits to their own needs based on their own practices, facilities, and the waste they typically handle, rather than using a one-size-fits-all approach. Stericycle proposed text: Anyone handling regulated medical waste shall maintain a spill containment and cleanup kit onsite within the vicinity of any area where regulated medical waste is managed, and the location of the kit shall provide for rapid and efficient cleanup of spills anywhere within the area. All vehicles transporting regulated medical wastes are required to carry a spill containment and clean up kit in the vehicle whenever regulated medical wastes are conveyed. A spill containment and cleanup kit shall consist of at least the following items: 1. Material designed to absorb spilled liquids, and the amount of absorbent material shall be that having a capacity, as rated by the manufacturer, of one gallon of liquid for every cubic foot of regulated medical waste that is normally managed in the area for which the kit is provided or 10 gallons, whichever is less; 2. In a sprayer capable of dispersing its charge in a mist and a stream at a distance, at least one gallon of an EPA-registered hospital grade disinfectant effective against mycobacteria, unless it can be demonstrated that an alternate EPA-registered disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected; 3. Enough red plastic bags to double enclose at least 150% of the maximum load managed (up to a maximum of 500 bags) that meet the applicable requirements of 49 CFR Part 173, including the ASTM 125 pound drop test for filled bags (D959) or an exemption approved by the U.S. Department of Transportation and are accompanied by seals and labels. These bags shall be large enough to overpack any box or container normally used for regulated medical waste management by that generator, handler, or facility; 4. Appropriate personal protective equipment, such as puncture and leak resistant gloves, safety glasses or face shield, protective coveralls or bib, protective footwear, and mask or respiratory protection as needed; and 5. For vehicles only, a first aid kit, fire extinguisher, boundary marking tape, lights, and other appropriate safety equipment.</p>	<p>the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-140(C)(4).</b> As noted above, although Stericycle makes best efforts to use EPA-registered disinfectants, they are not always readily available. Stericycle requests that DEQ remove the language requiring use of an EPA-registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available.</p>	<p>The Environmental Protection Agency (EPA) and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates</p>

	<p>Stericycle proposed text: Following any spill or release of regulated medical waste or its discovery, the following procedures shall be implemented: ... 4. Clean and disinfect all areas and materials having been contacted by regulated medical waste using <del>a</del> <del>an</del> <del>EPA-registered</del> hospital grade disinfectant effective against mycobacteria in accordance with manufacturer’s label instructions, unless it can be demonstrated that an alternate <del>EPA-registered</del> disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected.</p>	<p>disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered “hospital grade” disinfectants. In March 2020, EPA introduced temporary regulatory amendment to address supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No changes have been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-150(E).</b> The requirement to limit access control to persons specifically designated to manage RMW is unnecessary as long as the waste cargo, itself, is secured. Stericycle recommends amending the language to add greater flexibility to this requirement, while still ensuring the safety and security of the RMW. Stericycle proposed text: All vehicles and equipment used in the transportation of regulated medical waste must have access controls <del>that limits access to those persons specifically designated to manage regulated medical waste,</del> and the cargo carrying body must be secured except when loading and unloading.</p>	<p>The Board appreciates the suggestion, but determines that the requirement as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-150(J).</b> As noted above, although Stericycle makes best efforts to use EPA-registered</p>	<p>The Environmental Protection Agency (EPA)</p>

	<p>disinfectants, they are not always readily available. Stericycle requests that DEQ remove the language requiring use of an EPA-registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available. Stericycle proposed text: All vehicles and equipment used to transport regulated medical waste must be thoroughly cleaned and disinfected before being used for any other purpose and prior to any transfer of ownership. Disinfection shall include using <del>a an EPA-registered</del> hospital grade disinfectant effective against mycobacteria in accordance with manufacturer’s label instructions, unless it can be demonstrated that an alternate <del>EPA-registered</del> disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected. Any areas of vehicles or equipment that are visibly contaminated, or that become contaminated as a result of a spill must be immediately decontaminated in accordance with 9VAC20-121-140.</p>	<p>and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered “hospital grade” disinfectants. In March 2020, EPA introduced temporary regulatory amendment to address supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No changes have been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-160(B)(4), (5).</b> As noted above, although Stericycle makes best efforts to use EPA-registered disinfectants, they are not always readily available. Stericycle requests that DEQ remove the language requiring use of an EPA-registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available.</p>	<p>The Environmental Protection Agency (EPA) and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates</p>

	<p>Stericycle proposed text: 4. Category A waste shall not be conveyed in reusable carts or containers unless the containers are subsequently cleaned and disinfected in accordance with 9VAC20-121-130 using <del>a an EPA-registered</del> disinfectant appropriate for the type of Category A waste managed and materials being disinfected. 5. All spills of Category A waste shall be cleaned and disinfected in accordance with 9VAC20-121-140 using <del>a an EPA-registered</del> disinfectant appropriate for the type of Category A waste managed and the materials being disinfected.</p>	<p>disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered “hospital grade” disinfectants. In March 2020, EPA introduced temporary regulatory amendment to address supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No changes have been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-220(A).</b> The requirements in this section should not universally apply to RMW transfer stations. Several of the requirements—including a water supply and a bermed pavement or liquid retaining lip—may be impracticable for transfer stations, which according to the proposed regulatory definition can include even parked vehicles transporting RMW. Moreover, as the agency noted, radiation detectors can cost between \$6,000 and \$8,000, plus periodic maintenance and calibration costs. It is unnecessarily costly and burdensome to require this equipment at all RMW transfer facilities. Stericycle proposed text: The design and construction of all regulated medical waste <del>transfer stations or</del></p>	<p>The Board appreciates the suggestion, but determines that the requirement as written in the proposed regulations are necessary to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>

	treatment facilities shall be governed by the standards set forth in this section. These facilities shall have: ...	
Cara Simaga, Stericycle, Inc.	<p><b>9VAC20-121-230(E).</b> As noted above, although Stericycle makes best efforts to use EPA-registered disinfectants, they are not always readily available. Stericycle requests that DEQ remove the language requiring use of an EPA-registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available. Stericycle proposed text: All facilities that manage reusable carts or containers for regulated medical waste shall comply with the requirements of 9VAC20-121-130 and maintain onsite an adequate water supply and sufficient quantity of detergent and <del>EPA-registered</del> disinfectant or other approved materials, as applicable.</p>	<p>The Environmental Protection Agency (EPA) and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered “hospital grade” disinfectants. In March 2020, EPA introduced temporary regulatory amendment to address supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No changes have been made in response to this comment.</p>
Cara Simaga, Stericycle, Inc.	<p><b>9VAC20-121-230(K)(4).</b> The timeframe proposed here is too short and overly burdensome. For certain categories of unauthorized waste, it can take substantially longer than 10 days to identify and</p>	<p>The number of days that unauthorized waste is allowed to remain on site is consistent with other</p>

	<p>contract with an appropriate vendor for removal and/or management of the waste. Stericycle recommends allowing at least 30 days to remove unauthorized waste that has been appropriately separated from the RMW and stored.</p> <p>Stericycle proposed text: Any unauthorized waste accepted by the owner or operator shall be managed in accordance with applicable federal or state laws and regulations. The facility must carefully store the waste in a designated storage area within the facility separate from untreated regulated medical waste and treated regulated medical waste. Unauthorized waste that has been segregated and stored shall be adequately secured and contained to prevent leakage or contamination to the environment. The facility shall have the unauthorized waste removed or properly managed as soon as practicable, but no later than <del>40</del> <u>30</u> calendar days after discovery or an alternate timeframe as approved by the department for certain waste types. Handling and management of the unauthorized waste, including segregation, removal, and transportation, shall be by a person authorized to manage such waste and shall be transferred, treated, or disposed of at a permitted waste management facility approved to receive it.</p>	<p>limitations on the storage of untreated waste in other parts of the regulation. In addition, the facility owner/operator's unauthorized waste plan should anticipate the types of unauthorized wastes it could receive and have general plans in place for managing those wastes. The Board will retain the 10-day limitation but amend the proposed text to provide for the opportunity for a permittee to request an extension of up to 30 days.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-230(V)(1-6).</b> The language requiring training on challenge testing for all facility operators should be removed. Challenge testing training is not generally necessary or considered an industry best practice for all personnel.</p> <p>Stericycle proposed text: Prior to managing regulated medical waste or using process equipment, and at least annually, within one year from the date of the last training, the facility shall provide all operators with training on the procedures for managing regulated medical waste specific to the transfer or treatment process used, including: 1. General handling of regulated medical waste and use of personal protective equipment; 2. Packaging, labeling, and storage of regulated medical waste; 3. Cleaning and disinfection of reusable containers; 4. Facility housekeeping and management of spills; 5. Overall process and mechanical operation of any equipment used, including operation of any treatment units <del>and procedures for conducting periodic challenge testing</del>; and 6. Emergency contingency plan procedures, in case of system failure or other emergency.</p>	<p>The Board agrees and regulatory text was modified to limit training on treatment equipment and challenge testing to treatment facility operators.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-240(B)(1).</b> Stericycle recommends that the proposed regulations require segregation of pathological waste and trace chemotherapy waste, as well as specific treatment processes for each of these waste streams. In addition, Stericycle recommends adding language to the proposed rule requiring generators to segregate and label this waste to help ensure proper treatment and handling procedures are</p>	<p>The proposed regulation requires generators of regulated medical waste to identify and segregate wastes. In addition, the regulation references the applicability of other regulations. No changes</p>

	<p>utilized. Many medical waste treatment facilities already routinely accept pathological and trace chemotherapy waste - those waste streams should be removed from the definition of "unauthorized waste" and instead DEQ should add these segregation and treatment requirements. (See also Stericycle's comments to proposed section 9VAC20-121-10, above).</p> <p>Stericycle proposed text: <u>"Pathological waste" means all tissues, organs, limbs, products of conception, and other body parts removed from the whole body, including but not limited to: (1) tissues; organs; secretions; excretions; blood; bodily fluids; body parts; or body parts removed during surgery, autopsy, or other medical procedure (with the exception of human teeth), and (2) contaminated animal tissue, including animal carcasses, organs, and body parts, that have been exposed to pathogens in research, were used in the production of biologicals or the in vivo testing of pharmaceuticals, or that died of a known or suspected infectious disease.</u></p> <p><u>Pathological waste: The secondary container used for pathological waste shall be labeled with the word "Pathological Waste" or "PATH" or other label approved by the Department. Labels shall be placed on the lid and all sides of the container so as to be readily visible from all directions.</u></p> <p><u>"Trace chemotherapy waste" means waste contaminated through contact with, or having previously contained, chemotherapeutic agents, including but not limited to gloves; disposable gowns; towels or wipes; intravenous solution bags and attached tubing that are empty.</u></p> <p><u>Trace chemotherapy waste: The secondary container used for chemotherapy waste shall be labeled with the word "Chemotherapy Waste" or "CHEMO" or other label approved by the Department. Labels shall be placed on the lid and all sides of the container so as to be readily visible from all directions. Sharps waste contaminated through contact with, or having previously contained, chemotherapeutic agents shall be placed in a sharps container labeled in accordance with the above requirements.</u></p> <p><u>Generators shall segregate and label waste according to type (including pathological, trace chemotherapy, and non-hazardous pharmaceutical wastes) to facilitate the appropriate and effective treatment method and operating parameters shall be appropriate and effective for the type of waste being managed.</u></p>	<p>have been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-240(B)(16).</b> This proposed requirement is impracticable. Given the materials and volume involved, it is not possible to keep all carts and containers (including autoclave carts/bins) completely clear of treated waste residuals between cycles. Small amounts of film plastics often melt onto the insides of</p>	<p>The Board agrees with the comment, and the text has been revised.</p>

	<p>autoclave carts during the treatment process. It is not feasible to remove this melted plastic. Stericycle requests that DEQ remove this requirement or amend the language to allow for a more practicable maintenance plan and/or a de minimis amount of residual material that will nonetheless not affect the equipment's performance.</p> <p>Stericycle proposed text: <del>Reusable treatment carts and containers (such as autoclave carts) shall be clean and free of treated waste residuals before reuse.</del></p>	
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-240(C)(1).</b> The best method for determining efficacy is through validation testing. Establishing operating parameters in the absence of such testing does not guarantee efficacy. The term “a large quantity of liquid” is impractically vague. “Large quantity” is not defined. Even if the term were to be defined, a treatment facility cannot—and for safety reasons should not—open containers of RMW to attempt to quantify the amount of liquid present in any particular autoclave cart/bin.</p> <p>Stericycle proposed text: <del>All autoclaves shall be operated at 100% saturated steam conditions at a minimum operating temperature of 250°F (121°C) at no less than 15 pounds per square inch of gauge pressure. Autoclaves shall maintain the minimum operating temperature and pressure for an uninterrupted cycle of 90 minutes. Alternate appropriate combinations of operating temperatures, pressures, and cycle times that have been may be demonstrated through validation testing to achieve a reliable and complete kill of all microorganisms in regulated medical waste at design capacity. Longer steam sterilization times are required when a load contains a large quantity of liquid.</del></p>	<p>The Board agrees validation testing is needed to demonstrate the efficacy of treatment for various operating temperatures, pressures and cycle times, but still determines the provided example of operating conditions does not prevent alternate operating conditions. The text has been reworded to require autoclave operation at conditions that are demonstrated through site-specific validation testing to achieve reliable and effective treatment of the waste stream, instead of requiring a standard set of autoclave operating conditions. Minimum temperature and pressure are still specified based on accepted industry practice.</p> <p>As to the statement regarding liquids in the loads, the facility should be familiar with the regulated medical waste being treated to know if there are liquids, without having to open bags of regulated medical waste. This statement was added to reiterate that wet loads may require longer cycle times to achieve effective treatment. The regulatory</p>

		text has been revised for clarification.
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-280(D)(1-3).</b> The provision requiring specific language in contracts between RMW treatment facilities and solid waste transfer and disposal facilities should be removed. Although Stericycle understands and respects the state’s authority to require RMW treatment facilities to send treated waste to appropriate transfer facilities and end disposal locations, the terms of the agreements between these entities are private contracting matters outside to scope of DEQ’s regulatory authority. Moreover, for RMW companies such as Stericycle, that operate in multiple states, state-by-state regulations that dictate specific contract terms are unmanageable.</p> <p>Stericycle proposed text: <del>The regulated medical waste treatment facility shall have a written agreement with each permitted solid waste management facility that will transfer, store, or dispose of the treated waste. The agreement shall specify and include the following: 1. A description of how the treated waste will be packaged and transported to each solid waste management facility, including the types and colors of bags or containers used, and any special labeling if applicable; 2. The type of regulated medical waste treated, treatment method, and name, address, and telephone number of the treatment facility; and 3. The name, address, and telephone number of any transfer stations or other intermediate facilities or locations where the treated waste will be transferred or temporarily stored prior to transport to a permitted solid waste disposal facility.</del></p>	<p>The intent of the regulation was to make sure regulated medical waste treatment facilities coordinate with the waste management facilities handling the treated waste so they are familiar with the treatment process and wastes that will be received in order to distinguish between treated and untreated waste. Regulatory text has been changed to require the treatment facility to provide a treated waste disposal plan to receiving waste management facilities and document the distribution of the plan.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-290(A)(1).</b> As noted above, although Stericycle makes best efforts to use EPA-registered disinfectants, they are not always readily available. Stericycle requests that DEQ remove the language requiring use of an EPA-registered disinfectant or add language allowing flexibility or other disinfectant options so that appropriate disinfection can occur when EPA-registered disinfectants are not readily available.</p> <p>Stericycle proposed text: When a unit that has been used for regulated medical waste management is to cease operations involving regulated medical waste, the unit and all related equipment, structures, and surfaces shall be thoroughly cleaned and disinfected. Cleaning shall be conducted with detergent and water. At a minimum, disinfection shall include using <del>a an</del> <del>EPA-registered</del> hospital grade disinfectant effective against mycobacteria in accordance with manufacturer’s label instructions, unless it can be demonstrated to the satisfaction of the department that an alternate <del>EPA-registered</del> disinfectant will be protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected.</p>	<p>The Environmental Protection Agency (EPA) and the Food &amp; Drug Administration (FDA) regulate the labeling and sale of disinfectants in the United States. In general, EPA regulates disinfectants and sterilants used on environmental surfaces, and FDA regulates those used on critical or semi-critical medical devices. EPA has a process to register disinfectant products, including those that are considered “hospital grade” disinfectants. In March 2020, EPA introduced temporary regulatory amendment to address</p>

		<p>supply chain disruptions for disinfectants effective against Coronavirus. These temporary regulatory flexibilities allowed the use of non-registered disinfectants during the early days of the pandemic. In September 2021, EPA announced termination of the temporary amendment due to the stabilization of the supply chain, and compliance with the permanent requirements is required by September 2022. The Board would expect EPA to exercise similar options in the future if supply chain disruptions occur again. No change has been made in response to this comment.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-300(C)(2).</b> This threshold for a new permit-by-rule is overly broad and unworkably vague, as it does not provide regulated entities any metrics for understanding what the department would consider to be a “substantial” change in design or process. Stericycle proposed text: A new permit-by-rule is required when there is: <del>Any change in design or process of a regulated medical waste management facility that will, in the opinion of the department, result in a substantially different type of facility.</del></p>	<p>The Board has revised the text to provide additional regulatory text to clarify what would constitute a new PBR facility as opposed to a PBR modification as discussed in 9VAC20-121-310 A 6.</p>
<p>Cara Simaga, Stericycle, Inc.</p>	<p><b>9VAC20-121-340(G), (H).</b> The requirements in these sections are vague in that they appear to apply to treatment facilities and generators respectively, but do not state this explicitly. Stericycle proposes adding these clarifications. Stericycle proposed text: G. If <u>a treatment facility receives</u> regulated medical waste <del>is received</del> from offsite, <u>the treatment facility shall maintain records</u> <del>shall be maintained</del> for three years following receipt of the waste and shall include the date of receipt, name of each offsite generator, transporter, type and quantity (weight or volume) of waste received, and dates of subsequent treatment onsite or shipment offsite. The <u>treatment facility</u> shall maintain a signed certificate, contract, or equivalent document for each load or inclusive of all loads received from offsite in which the generator affirms that the load does not contain hazardous waste or radioactive materials, unless the facility is permitted to receive those types of wastes.</p>	<p>The Board determines that the requirements as written are sufficient and meant to apply to any facility receiving or shipping waste as applicable, whether they are a treatment facility or transfer station. No change has been made to the regulation in response to this comment.</p>

	<p>H. If regulated medical waste is shipped or transferred offsite, the <u>generator</u> facility shall maintain records, including copies of all shipping papers, specifying the date of shipment, type, and quantity (weight or volume) of waste removed from the site and the names, addresses, and telephone numbers of both the transporters and the destination facility receiving the shipments for treatment or disposal.</p>	
<p>Cara Simaga, Stericycle, Inc.</p>	<p>Additionally, Stericycle supports DEQ's removal of the requirement to shred treated RMW. Shredding is not necessary prior to disposal and adds additional expense and complication.</p>	<p>The Board thanks the commenter for their support.</p>
<p>Anne Germain, and Darrel K. Smith, Healthcare Waste Institute of the National Waste &amp; Recycling Association (NWRA HWI)</p>	<p><u>Section 9VAC20-121-40 Applicability</u>                  Part B of this section requires that all existing regulated medical waste management facilities must submit a complete permit application within six months after the effective date of this regulation to come into compliance with this chapter. While HWI members support many of the changes in the regulations, we do not support the requirement for a new application to be submitted by existing facilities with current permits. Rather, we recommend that existing permittees be instead required to comply with the new regulations upon permit renewal.</p>	<p>The regulatory text has been clarified to outline what permit applications for existing facilities will need to include. Public participation will not be required for existing facilities to comply with the regulations unless the updated application includes changes that result in a different type of facility (e.g. change from transfer to treatment facility or change from captive to non-captive facility). The time frame for PBR application submittal is also extended to 18 months. As part of this amendment, the permit procedures for all types of facilities have been made more consistent, and the regulation no longer distinguishes "on-site" PBRs from "offsite" PBRs. In addition, on-site PBRs did not previously require a 10-year renewal. Therefore, a set timeframe for submittal of PBR applications by all existing facilities has been outlined in the regulation. The Board determines that a six month time frame may be impractical or difficult for facilities; therefore, the timeframe for submittal of the application is</p>

		extended to 18 months. The extended time frame will also allow DEQ time to provided training and compliance assistance.
Anne Germain, and Darrel K. Smith, NWRA HWI	<u>Section 9VAC20-121-120. Storage of regulated medical waste.</u> HWI supports requirements to limit storage of regulated medical waste. However, the storage time for small generators is very limited. We recommend increasing the storage time to 90 days. In addition, we recommend that onsite storage for both RMW treatment facilities and transfer stations be ten days.	The Board determines the proposed storage requirements for small generators (less than 250 gallons) is reasonable and protective. Additionally, treatment facilities may store RMW for no more than 10 days, and transfer stations may store RMW up to 15 days provided waste is refrigerated after seven days. No change has been made in response to this comment.
Anne Germain, and Darrel K. Smith, NWRA HWI	<u>Section 9VAC20-121-240. Treatment standards.</u> B.16 of this section requires that reusable treatment containers (autoclave bins) be clean and free of residuals before reuse. Often when being treated small amount of film plastics will melt onto the insides of the containers. Cleaning methods do not remove this melted plastic. We recommend that the language be modified to provide consideration for this de minimum material.	The Board agrees with the comment, and the text has been revised.
Anne Germain, and Darrel K. Smith, NWRA HWI	<u>Section 9VAC20-121-240. Treatment standards.</u> C.1 of this section requires specific temperature, pressure and time for autoclave operations with alternate combinations permitted based on demonstration through validation testing. The 90 minute cycle at 250 degrees F is significantly longer and much cooler than typical. We suggest instead requiring validation testing to determine the appropriate operations parameters for each treatment facility.	The Board agrees that validation testing is critical to demonstrate appropriate operating parameters (temperature, pressure, and cycle times) for effective treatment of regulated medical waste. The text has been revised to clarify; however, minimum operating criteria for temperature and pressure in accordance with standard accepted industry practice has been left in the regulations.
Anne Germain, and Darrel K. Smith, NWRA HWI	<u>Section 9VAC20-121-240. Treatment standards.</u> C.3 of this section requires a minimum of three pre-vacuum cycles to be conducted. Typically, there are three vacuum cycles are conducted: once at the beginning, once at the end of the pre-heat cycle and a final time at the end of the final heat cycle. However,	Pulling multiple vacuums prior to the residence phase of the treatment cycle conditions the waste and its packaging to ensure that all portions

	<p>there are not three “pre”-vacuum cycles. We suggest removing the prefix “pre” from the language.</p>	<p>of the waste in the treatment unit receive adequate steam exposure. Adequate steam exposure ensures that minimum temperatures necessary for effective treatment are achieved in all portions of the waste in the treatment unit. The text has been revised to require a minimum of two pre-vacuums, unless (based on the results of validation testing), additional vacuum is needed for certain waste or packaging types.</p>
<p>Curtis Knisley</p>	<p>9VAC20-121-40 Applicability, Paragraph B. The cost involved with re-permitting were in the \$10,000-\$20,000 range, just for the engineering firm to certify the facility, format and submit the application. This is an extremely high cost for small medical waste transporters with a small transfer station. The only change in our permit would seem to be the addition of radiation detectors. This brings me to my next concern.</p>	<p>As part of this amendment, the permit procedures for all types of facilities have been made more consistent, and the regulation no longer distinguishes “on-site” PBRs from “offsite” PBRs. The Board determines that updating permit-by-rule applications are necessary to ensure compliance with the new regulations and to protect the health, safety and welfare of the public. The regulatory text has been revised to give more time to existing permitted facilities (i.e. eighteen months instead of the proposed six months after the regulation becomes effective) to submit updated permit applications to come into compliance with the new regulation.</p>
<p>Curtis Knisley</p>	<p>9VAC20-121-220 Design and construction requirements, Number 12. Ludlum Radiation Monitoring Systems were running about \$11,000.00 in 2020. With inflation I am sure that price has climbed to close to \$15,000.00. Installation is not included in the cost but, would run at least another \$5,000.00. For transfer stations that only accept waste</p>	<p>The Board determines that any non-captive regulated medical waste facility (i.e. facilities that receive waste from offsite), should be equipped with radiation</p>

	<p>from customers, whose businesses they are familiar with, through transporter collection, radiation monitors seem like an unnecessary burden. I could understand if the medical waste transfer station was accepting waste from haulers that were not associated with the transfer station.</p>	<p>detectors to ensure that unauthorized (radioactive) waste is not received unknowingly. No changes were made in response to this comment.</p>
<p>Curtis Knisley</p>	<p>Another issue not addressed in the regulations is the difficulty in finding licensed operators. Since the Board of Waste Management Facility Operators went to a closed book test, very few individuals have been able to pass the test, leaving a shortage of operators. Many had hoped that the requirement for Medical Waste Transfer Station Operators, to be licensed, would be going away. In most Medical Waste Transfer Stations containers are not even opened, just transferred from collection vehicles to long-haul trailers. The license requirement, (as long as the Board of Waste Management Facility Operators continues to not allow open book tests) for Medical Waste Transfer Stations may end up being the reason transfer stations begin to close.</p>	<p>The requirement for the facility to be operated by a licensed waste management facility operator (WMFO) is a statutory requirement (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly. In addition, 18VAC155-20-110.A.3 of the Department of Professional and Occupational Regulation's WMFO Regulations (which is not part of this regulatory amendment) requires individuals operating a facility regulated under the Regulated Medical Waste Management Regulations to hold a Class III license. State law does not provide DEQ or the Virginia Waste Management Board with the authority to revise licensing criteria or examination procedures for waste management facility operators. Under §54.1-2211 of the Code of Virginia, the Board for Waste Management Facility Operators promulgates regulations and standards for the training and licensing of operators. No change has been made to the regulation in response to this comment.</p>

<p>Sharon L. Baumann, Department of Defense (DoD)</p>	<p><b>1. 9VAC20-121-10 Definitions, Hazardous Material</b>  <b>Comment:</b> The DoD is concerned that the definition does not fully encompass the U.S. Department of Transportation definition of hazardous material and may result in confusion to the reader.  <b>Discussion:</b> The U.S. Department of Transportation definition of hazardous material is more definitive and descriptive.  <b>Recommendation:</b> The following revision to the definition of a "Hazardous Material" is provided for consideration in order to provide clarity.  <b>Recommended Definition:</b> "Hazardous material" means a substance or material that <u>the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and is designated as hazardous under section 5103 of the Federal hazardous materials transportation law (49 U.S.C. 5103).</u></p>	<p>The Board appreciates the suggestion, but determines that the definition as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.</p>
<p>Sharon L. Baumann, DoD</p>	<p><b>2. 9VAC20-121-10 Definitions, Sharps</b>  <b>Comment:</b> The DoD is concerned that the definition, as written, is more inclusive than needed for protection of human health for the discard of unused sharps contained in its original inner and outer packaging.  <b>Discussion:</b> Including discarded unused sharps contained in its original inner and outer packaging subjects these items to the Regulated Medical Waste regulations that provide no additional protection of human health. The industry standard for treating sharps is autoclaving, followed by placement in landfills. Excluding unused sharps from 9VAC20-121-10 would maintain consistency with the Department of Transportation's definition of sharps in 49 CFR 173.134(a)(6).  <b>Recommendation:</b> The following revision to the definition of "Sharps" is provided for consideration along with the regulatory citation, 49 CFR 173.134(a)(6):  <b>Recommended Definition:</b> "Sharps" means needles, scalpels, knives, lancets, syringes with attached needles, suture needles, pasteur pipettes, broken glass, broken rigid plastic, and similar items having a point or sharp edge or that are likely to cause percutaneous injury or break during transportation and result in a point or sharp edge that may puncture or compromise the integrity of the container. <u>Discarded unused sharps contained in its original liner and outer packaging are excluded from this definition.</u>  <u>49 CFR 173.134(a)(6)</u>                  Sharps means any object contaminated with a pathogen or that may become contaminated with a pathogen through handling or during transportation and also capable of cutting or penetrating skin or a packaging material. Sharps includes needles, syringes, scalpels, broken glass, culture slides, culture dishes,</p>	<p>The Board agrees with the comment, and the text has been clarified.</p>

	broken capillary tubes, broken rigid plastic, and exposed ends of dental wires.	
Sharon L. Baumann, DoD	<p><b>3. 9VAC20-121-160.C, Management of Category A Waste</b></p> <p><b>Comment:</b> The DoD is concerned that the regulation does not provide definitive guidance that clarifies the packaging and labeling standard.</p> <p><b>Discussion:</b> The packaging and labeling standard should meet the current United Nations standards/provisions for UN3549, Category A waste, and not the older standards used during the Ebola crisis.</p> <p><b>Recommendation:</b> The following revision to 9VAC20-121-160.C is provided for consideration to provide additional clarity.</p> <p><b>Recommended Language:</b> Waste Transporter Information and Responsibilities for Category A waste are specified in Section 6 of Managing Solid Waste Contaminated with a Category A Infectious Substance. Packaging and labeling of Category A waste for transport must comply with the <u>“packaging and labeling provisions applicable to United Nations requirements noted under UN3549, “Medical waste, category A, affecting animals only, solid” or “Medical waste, category A, affecting humans, solid”.</u></p>	The Board appreciates the suggestion, but determines that the requirement as written in the proposed regulations are sufficient to protect the health, safety and welfare of the public. No change has been made in response to this comment.
Sharon L. Baumann, DoD	<p><b>4. 9VAC20-121-240. B.1.a, Treatment standards</b></p> <p><b>Comment:</b> The word “noncombustible” should replace “noncombustion” for correctness.</p>	The text has been revised to clarify that human pathological and anatomical waste shall be treated by incineration or other method as approved by the Department.
Sharon L. Baumann, DoD	<p><b>5. 9VAC20-121-240.B.8, Treatment standards</b></p> <p><b>Comment:</b> The DoD is concerned that the regulation does not provide clarity for operation of any treatment unit.</p> <p><b>Discussion:</b> The regulation is too generic and may not include specific information for operation of any treatment unit.</p> <p><b>Recommendation:</b> The following revision to 9VAC20-121-240.B.8 is provided for your consideration:</p> <p><b>Recommended Language:</b> Prior to operation of any treatment unit, the facility must conduct validation testing in accordance with 9VAC20-121-260 and an approved treatment plan to establish the appropriate operating parameters for effective treatment of regulated medical waste. The results of the testing must be submitted to the department for review and approval in accordance with 9VAC20-121-320. The facility shall not receive or treat regulated medical waste until the department has approved the validation results, operating parameters, and protocols to be used for the treatment unit. Revalidation shall be conducted as required by 9VAC20-121-260. <u>Use of bioassays to</u></p>	9VAC20-121-240 B 1 d of the regulation already includes text similar to the suggested revision requiring toxin inactivation procedures to include the use of bioassays during validation testing. No changes have been made in response to this comment.

	<u>validate the effectiveness of toxin inactivation is necessary to meet required protocols and should not be assumed.</u>	
Jason Folker	<p><b>RMW /Testing Concerns</b></p> <p>My concern is indirectly related to the new proposed regulations and as required by § 10.1-1408.2 of the Code of Virginia, a regulated medical waste management facility must have at least one operator licensed by the Board for Waste Management Facility Operators. To obtain the license, it requires passing a test which covers several hundred pages of regulations. I have not received one justifiable reason for changing the test from open book, to closed book testing, after inquiring several times. The ability to memorize several hundred pages of regulations and recall for a test does not seem to be a good demonstration of comprehension. Regulations were made to be referenced, and the test should be an indicator of one’s ability to locate and make applicable to a specific situation or question. The closed book test seems to intentionally eliminate candidates or potential operators, which in turn eliminates more jobs, greater impacting the small businesses within the proposed medical waste arena.</p>	<p>State law does not provide DEQ or the Virginia Waste Management Board with the authority to revise licensing criteria or examination procedures for waste management facility operators. Under §54.1-2211 of the Code of Virginia, the Board for Waste Management Facility Operators promulgates regulations and standards for the training and licensing of operators. No change has been made to the regulation in response to this comment.</p>

**Detail of Changes Made Since the Previous Stage**

*List all changes made to the text since the previous stage was published in the Virginia Register of Regulations and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.*

Current chapter-section number	New chapter-section number, if applicable	New requirement from previous stage	Updated new requirement since previous stage	Change, intent, rationale, and likely impact of updated requirements
9VAC20-121-10		Defines autoclave as a sterilization process.	Defines autoclave as a treatment process.	The word “sterilization” has been replaced with the word “treatment.” The word “sterilization” implies inactivation of 100% of applicable microbes whereas effective treatment of regulated medical waste must achieve a 6 Log 10 (99.9999%) or greater reduction of applicable microbes. The revised term is more precise and improves clarity.
9VAC20-121-10		Defines body fluids and clarifies that the term “body	Defines body fluids and clarifies that the term “body fluids” does	Replaced “toenail” with “nail.” Nail clippings includes both fingernail clippings and toenail clippings. Neither are considered body

		fluids” does not include toenail clippings.	not include nail clippings.	fluids, and are therefore not considered regulated medical waste. This replacement makes this exclusion to the definition more correct.
9VAC20-121-10		Defines the term sharps.	Revises the definition of sharps to be similar to 49 CFR 173.134(a)(6) of the US DOT Hazardous Materials Regulations and excludes unused (uncontaminated) sharps in the original packaging from the definition.	This clarification ensures that these regulations are more consistent with federal transportation regulations, which will reduce confusion and make it easier for the regulated community to identify regulated medical waste.
9VAC20-121-10		Defines unauthorized waste and provides examples.	Defines unauthorized waste, provides examples, and clarifies that the types of wastes that are considered unauthorized waste are site-specific.	The definition of unauthorized waste has been revised to provide more flexibility in what is considered authorized or unauthorized waste considering the facility’s site-specific conditions and permit allowances.
9VAC20-121-40 B	9VAC20-121-40 B 1-9	Provides 6 months for existing permitted facilities to submit a new permit application to come into compliance with the new regulations.	Provides 18 months for existing permitted facilities to submit an updated permit application and outlines what documents need to be submitted to come into compliance with the new regulations. Public participation will not be required for existing facilities unless the updated application includes changes that result in a different type of facility.	The proposed regulations eliminate the requirement for 10-year permit renewal; therefore, a set time frame for submittal of updated permit applications has been outlined in the regulation. The time frame for existing facilities to submit updated permit applications to come into compliance with the new regulations has been extended from 6 months to 18 months. The regulatory text has also been revised to clarify that permit applications for existing facilities will not need to include public participation unless the facility type is changing. The Board has determined that a six month time frame may be impractical or difficult for facilities and the extended time will also allow DEQ time to provided training and compliance assistance.

9VAC20-121-70 D 3		Requires public notice of certain documents to be provided on the department's internet website.	Requires public notice of certain documents to be provided on the department's website.	The word "internet" was removed as it is not necessary for the interpretation of the requirement. Necessary to correct a typographical error.
9VAC20-121-90 B 2 d		Identifies the types of sharps that are considered regulated medical waste.	Identifies the types of sharps that are considered regulated medical waste, using terminology that is similar to 49 CFR 173.134(a)(6) of the US DOT Hazardous Materials Regulations.	The text has been clarified for consistency with the revised definition of "sharps" and for consistency with the federal transportation regulations. Necessary to interpret this requirement correctly.
9VAC20-121-90 C 4		Identifies that human remains are not solid waste or regulated medical waste under conditions meeting all of 4 criteria.	Identifies that human remains that meet any one of 4 conditions are not solid waste or regulated medical waste.	The text has been revised to clarify that each of the items under subdivision 4 represent separate exempt scenarios and are not dependent upon each other. Necessary to correct a typographical error that had inadvertently changed the meaning of this requirement.
9VAC20-121-90 C 8		Exempts used health care products and contaminated medical devices or equipment when reprocessed in accordance with FDA requirements	Two criteria specify conditions under which used health care products and contaminated medical devices or equipment being sent offsite for recycling or disposal are regulated medical waste.	The text has been revised to clarify that not all used health care products and contaminated medical devices or equipment being sent offsite for recycling or disposal are regulated medical wastes, but rather only those that meet the specific criteria for the identification of regulated medical waste under 9VAC20-121-90 B. Necessary to make the requirement properly specific.
9VAC20-121-90 C 10		Exempts certain tissue blocks fixed in paraffin or similar embedding materials for examinations and requires subsequent management	Certain fixed tissue blocks that are no longer needed may be managed and disposed of as solid waste, but may be managed more stringently.	The text has been revised to allow generators the flexibility to manage certain fixed tissue blocks as either solid waste or regulated medical waste to provide more options for disposal (e.g. incineration, when appropriate). Necessary to correct a typographical error that had inadvertently changed the meaning of this requirement.

		and disposal as solid waste.		
9VAC20-121-90 D 1 a		Prohibits treated waste from being packaged as regulated medical waste.	Prohibits treated waste from being repackaged as regulated medical waste.	The word “packaged” has been replaced with the word “repackaged.” The text has been revised to recognize that the packaging of some regulated medical waste may remain intact even after proper treatment, and because it has been treated, it may be disposed of as solid waste. If the waste is repackaged as regulated medical waste, it shall be managed as regulated medical waste. Necessary to clarify requirement.
9VAC20-121-90 D 3		Identifies solid wastes which are not considered regulated medical waste, including toenail clippings.	Identifies solid wastes which are not considered regulated medical waste, including nail clippings.	Replaced “toenail” with “nail.” Nail clippings, including both fingernail clippings and toenail clippings, are not considered regulated medical waste. Necessary to correct and clarify the list of solid wastes not considered regulated medical waste.
9VAC20-121-90 D 6		Identifies solid wastes that are not considered regulated medical waste, excluding unused or expired sharps.	Identifies solid wastes that are not considered regulated medical waste, including unused or expired (and uncontaminated) sharps in the original packaging.	Inserted “unused sharps in the original packaging” and deleted “This does not apply to unused or expired sharps, which are a regulated medical waste in accordance with 9VAC20-121-90 B 2 d.” This clarification ensures that these regulations are more consistent with federal transportation regulations. Necessary to clarify which sharps are not regulated medical wastes.
9VAC20-121-90 D 12		Exempts waste generated from the care of an animal by its owner and specifies that some veterinary wastes, such as sharps, are still regulated medical waste.	Exempts waste generated from the care of an animal by its owner and clarifies that waste generated through veterinary practice is only regulated medical waste if it meets either of the two criteria of regulated medical waste under 9VAC20-121-90 B.	The text has been revised to clarify that the exemption for animal care waste is not limited to only household and farm locations, and that not all waste generated by veterinary practice is regulated medical waste but rather only those that meet the specific criteria for the identification of regulated medical waste. Necessary to ensure that the requirements are interpreted properly.

9VAC20-121-100 B		Requires regulated medical waste to be identified and segregated from other waste.	Requires the generator to identify and segregate regulated medical waste from other waste.	The text has been revised to clarify that the generator is the entity responsible for identifying and segregating regulated medical waste from other waste. Necessary to ensure that the entity responsible is clearly specified.
9VAC20-121-120 D 3		Outlines regulated medical waste storage requirements for treatment facilities and requires recordkeeping.	Treatment facilities are required to keep records listed under 9VAC20-121-340 only insofar that they are applicable.	The referenced section of the regulations, 9VAC20-121-340 outlines recordkeeping requirements for all types of facilities. "As applicable" was added to clarify that treatment facilities would only be required to maintain records associated with the type of activities associated with receiving, treating, and shipping waste material as outlined in 9VAC20-121-340. Necessary to clarify requirement and avoid confusion in recordkeeping.
9VAC20-121-120 D 4		Outlines regulated medical waste storage requirements for transfer stations and requires recordkeeping.	Transfer stations are required to keep records listed under 9VAC 20-121-340 only insofar that they are applicable.	The referenced section of the regulations, 9VAC20-121-340 outlines recordkeeping requirements for all types of facilities. "As applicable" was added to clarify that transfer stations would only be required to maintain records associated with the type of activities associated with receiving and shipping waste material as outlined in 9VAC20-121-340. Necessary to clarify requirement and avoid confusion in recordkeeping.
9VAC20-121-120 D 5		Requires transfer stations and treatment facilities to track the length of time regulated medical waste is stored onsite.	A "log" is another allowable method for tracking the length of time regulated medical waste is stored onsite.	The text has been revised to clearly specify that a "log" may be used by transfer stations and treatment facilities to track the length of time regulated medical waste is stored onsite. This is a standard, accepted industry practice and is necessary to retain flexibility in demonstrating compliance.
9VAC20-121-230 K 4		Requires removal of unauthorized waste within 10 days of discovery.	Requires removal of unauthorized waste within 10 days of discovery, but allows a department-approved	Provides the owner/operator additional time to make arrangements for the management of wastes when the department determines that national treatment capacity is constrained or where pre-existing plans are not in place and

			alternate timeframe of up to 30 days for removal of unauthorized waste.	approves an alternative timeframe. Necessary to provide alternatives when the 10-day timeframe is not feasible.
9VAC20-121-230 V 5 & 6	9VAC20-121-230 V 5, 6 & 7	Outlines annual training requirements for operators of transfer stations and treatment facilities.	Outlines annual training requirements for operators of transfer stations and treatment facilities, and clarifies which training requirements are applicable to treatment facility operators only.	Training requirements for permitted facilities were modified to limit training on treatment equipment and challenge testing to treatment facility operators. Necessary to clarify that since not all permitted facilities operate treatment units and do challenge testing, training requirements should be limited to those that do.
9VAC20-121-240 B 1 a		Prohibits treatment of human pathological and anatomical waste and animal carcasses by a noncombustion process unless approved by the department.	Requires human pathological and anatomical waste and animal carcasses to be treated by incineration unless an alternative treatment process is approved by the department.	The text has been reworded to clarify that human pathological and anatomical waste and animal carcasses shall be treated by incineration or other method as approved by the Department. Necessary to more clearly specify allowed treatment methods and ensure the requirements are interpreted properly.
9VAC20-121-240 B 16		Requires reusable treatment carts and containers (such as autoclave carts) to be clean and free of treated waste residuals before reuse.	Requires reusable treatment carts and containers to be cleaned on a periodic basis to remove the buildup of more than de minimis amounts of treated waste residual on cart and container surfaces.	Reworded to specify how reusable treatment carts and containers shall be kept clean and free of treated waste residuals. Necessary because the original requirement was impractical and difficult to achieve.
9VAC20-121-240 C 1		Requires autoclaves to be operated at minimum operating temperatures, pressures, and cycle times, and alternate	Requires autoclaves to be operated at temperatures, pressures, and residence times that are demonstrated through validation	Reworded to require autoclave operation at conditions that are demonstrated through site-specific validation testing to achieve reliable and effective treatment of the waste stream, instead of requiring a standard set of autoclave operating conditions. Minimum temperature

		parameters may be demonstrated through validation testing to achieve effective treatment of regulated medical waste.	testing to achieve effective treatment of regulated medical waste. The minimum autoclave operating temperature and pressure allowed by the regulation is 250°F at 15 psi.	and pressure are specified based on accepted industry practice. The possibility of needing longer treatment cycles to treat wet loads is also emphasized. This is necessary to ensure that facilities have the flexibility to adapt the treatment method to operating conditions that are demonstrated to be effective.
9VAC20-121-240 C 3		Requires pulling three vacuums prior to the residence phase of an autoclave treatment cycle.	Requires pulling two vacuums prior to the residence phase of an autoclave treatment cycle, unless additional vacuum is required as determined through validation testing to ensure adequate steam exposure to a particular waste or packaging type.	The text has been revised to require a minimum of two (instead of three) pre-vacuums, unless based on the results of validation testing, additional vacuum is needed to ensure adequate steam exposure for certain waste or packaging types. Pulling multiple vacuums prior to the residence phase of the treatment cycle conditions the waste and its packaging to ensure that all portions of the waste in the treatment unit receive adequate steam exposure. Adequate steam exposure ensures that minimum temperatures necessary for effective treatment are achieved in all portions of the waste in the treatment unit.
9VAC20-121-250 G 1 a		Requires applicant to provide a description of the wasteload composition as part of an alternate treatment technology application.	Requires applicant to provide a description of the waste load composition as part of an alternate treatment technology application.	“Wasteload” (1 word) was revised to “waste load” (2 words). Necessary to correct a typographical error.
9VAC20-121-260 C 2		Requires surrogate wasteload configuration used in validation testing to be consistent with the configuration	Requires surrogate waste load configuration used in validation testing to be consistent with the configuration anticipated to be used during routine operation.	“Wasteload” (1 word) was revised to “waste load” (2 words). Necessary to correct a typographical error.

		anticipated to be used during routine operation.		
9VAC20-121-260 E 2		Requires thermochemical recording devices (e.g. data loggers or thermocouples) to be used during validation testing.	Clarifies the minimum number of thermochemical recording devices required during validation testing.	The text has been revised to clarify how many thermochemical recording devices shall be used during validation testing in accordance with standard, accepted industry practice. The number of devices used during validation testing is critical to gather enough data to determine appropriate operating parameters that will result in effective treatment of all waste and waste types in the treatment unit. Necessary to make the requirement properly specific and ensure effective treatment of regulated medical waste.
9VAC20-121-280 D 1-3	9VAC20-121-280 D 1-5	Treatment facilities are required to have written agreements with permitted solid waste management facilities receiving the treated waste.	A treated waste disposal plan containing the elements formerly required in the written agreement must be provided to facilities receiving treated waste. The plan must be updated and redistributed when necessary and records kept of distribution of the plan.	The text has been revised to require a treated waste disposal plan with the desired information be provided to facilities receiving treated waste, rather than requiring a written or contractual agreement between the treatment facility and receiving facility. The treatment facility shall document distribution of the plan and update and redistribute it when there are changes that impact the plan. Necessary to provide more flexibility to facilities to make transportation arrangements as necessary and to avoid regulatory interference with contractual agreements.
9VAC20-121-300 C 2		Requires a new permit-by-rule for any change in design or process of a facility that will, in the opinion of the department, result in a substantially different type of facility.	Requires a new permit-by-rule for any change in design or process of a facility that will result in a different type of facility, and provides specific examples of those changes.	Additional text has been added to clarify what would constitute a new or different type of facility requiring a new permit-by-rule as opposed to changes requiring only a permit modification as addressed by 9VAC20-121-310 A 6. The revised language is more precise and improves clarity for both the agency and the regulated community.

9VAC20-121-310 A 2 f		Requires a certification that the facility meets certain operational standards, which are documented in a regulated medical waste management plan.	Requires a certification that the facility meets certain operational standards, and that a copy of the regulated medical waste management plan (which describes how the facility meets those standards) is provided to the department.	The text was revised to clarify that a copy of the regulated medical waste management plan shall be provided along with the certification that the facility meets certain operational standards. A copy of the plan is required in order for the facility to demonstrate how certain operational standards have been met at the particular facility. Necessary to clarify the original intent.
9VAC20-121-310 A 2 i		Requires, as part of the permit application submittal, a written agreement with solid waste management facilities receiving treated waste.	Requires, as part of the permit application submittal, a treated waste disposal plan addressing facilities receiving treated waste.	This text was updated for consistency with changes to 9VAC20-121-280 D, which was revised to require a treated waste disposal plan instead of a written agreement with solid waste management facilities receiving treated waste. Necessary to make the permit application requirements correct.
9VAC20-121-330 E 11		Requires, as part of the treatment plan, a written agreement with solid waste management facilities receiving treated waste.	Requires, as part of the treatment plan, a treated waste disposal plan addressing facilities receiving treated waste.	This text was updated for consistency with changes to 9VAC20-121-280 D, which was revised to require a treated waste disposal plan instead of a written agreement with solid waste management facilities receiving treated waste. Necessary to make the treatment plan requirements correct.
9VAC20-121-340 C		Requires facility to maintain accurate written records.	Regulation allows written or digital records to be maintained.	This revision allows the facility maintain written or digital records and acknowledges that some facilities may have digital recordkeeping or tracking systems which can provide requested information. Necessary to conform to more modern recordkeeping standards.
Documents Incorporated by Reference		Reference to Pipeline and Hazardous Materials Safety Administration's 2019 document for management of waste	Reference to Pipeline and Hazardous Materials Safety Administration's 2022 document for management of waste	Reference was updated to the most current version of the federal policy for management of Category A waste, as found on the PHMSA website ( <a href="https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2022-06/Cat%20A%20Waste%20">https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2022-06/Cat%20A%20Waste%20</a> )

		contaminated with a Category A infectious substance.	contaminated with a Category A infectious substance.	Planning%20Guidance_Final_2022_06.pdf).
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**Detail of All Changes Proposed in this Regulatory Action**

*List all changes proposed in this action and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.*

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
Part I	Part I	Definitions	<b>This part contains the definitions for terms used in this regulation.</b>
10	10	Definitions	<p>Several terms were added or clarified to more clearly identify facility types (including Captive Regulated Medical Waste Management Facility, Regulated Medical Waste Transfer Station, and Regulated Medical Waste Treatment Facility).</p> <p>Definitions were added to address Category A waste (e.g. Category A infectious substance and Category A waste) as a type of regulated medical waste.</p> <p>Several definitions were added to address enhanced procedures for validation and challenge testing (e.g. biological indicator, challenge testing, exposure time, operating parameters, parametric controls, and validation testing).</p>
Part II & III	Part II	General Information	<b>This part contains the authority for the regulation, purpose of chapter, prohibitions, enforcement policy, and the identification of regulated medical waste.</b>
20	N/A	Reserved	Deleted as not necessary.

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
30	20	Purpose of regulations	Explains the purpose of these regulations. Section was recodified. No other changes.
40	30	Administration of regulations	This section explains the statutory authority and also describes the role of the Waste Management Board and the Director. Section was recodified and revised to be consistent with the Solid Waste Management Regulations (VSWMR, 9 VAC 20-81).
50	40	Applicability of regulations	Explains the types of facilities and persons who are required to comply with these regulations. Deadline for existing permitted facilities to update their permits included. Section was recodified.
60	N/A	Severability	Deleted as not necessary.
N/A	50	Prohibitions	New Section. Added to clarify prohibitions regarding the management of regulated medical waste, such as operating without a permit or discharging RMW into surface waters, groundwaters, or storm drains. Includes language from former 120-100 A, 160, & 300 B. Format mimics VSWMR.
N/A	60	Enforcement and appeal	New Section. Added to clarify enforcement procedure and to be consistent with the VSWMR language and format.
N/A	70	Public Participation and Information	New Section. Added to clarify public participation applicability. Format mimics VSWMR.
70	80	Relationship to Other Bodies of Regulation	Section 120-70 was recodified. References to federal regulations were updated. Added relationships for facilities managing select agents or toxins (replacement of etiological agents, former 120-230); radioactive materials (moved from 120-320); and Financial Assurance (moved from 120-190).
80, 90, 100, 110, 130, 140, 150	90*	Identification of Regulated Medical Waste	Consolidation of sections 120-80, 90, 100, 110, 130, 140, and 150. RMW definition, examples, exemptions, and exclusions were previously spread throughout multiple sections of the regulation (former Part III) and have been consolidated into this one section. Additional RMW examples and exemptions added based on frequent questions from the public and regulated community. Identified Category A waste

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
			as a type of RMW. Clarified the exemption for household waste, including household sharps. Clarified when human blood and body fluids solidified by absorbent gel, powder, or similar means are RMW. Clarified that acupuncture needles are RMW (sharps).
120	Deleted	Exemptions to the regulations	Section focuses on items that are not solid waste and exemptions are already addressed in VSWMR, 9VAC20-81-95.
<b>Part IV, V, &amp; VI</b>	<b>Part III</b>	<b>Standards for Management of Regulated Medical Waste</b>	<b>This part describes the general handling, packaging and labeling, storage, spill management, and transportation of RMW applicable to all generators and handlers of RMW. Management of Category A RMW also included.</b>
160	Deleted	Permit required.	Section 160 is deleted here and included in 121-50.A.
170	Deleted	Exemptions from permitting	Section 170 is deleted here and included in 121-120 and 121-300 E.
180	Deleted	Persons qualifying for an on-site permit by rule	Section 180 is deleted here. Removing on-site permit by rule (PBR) option. PBR requirements applicable to all RMW transfer stations and treatment facilities are addressed in 121-310 A.
190	Deleted	Financial assurance requirements	Section 190 is deleted here. Reference to Financial Assurance regulations (9 VAC 20-70) added in 121-80.
250, 300 A, 300 C, 310, 390, 470, 560	100	General Handling and Generator Requirements	Consolidation of 120-250, 300 A, 300 C, 310, 390, 470, 560 to streamline and clarify the requirements applicable to all generators and handlers of RMW. Removed requirement to maintain records listed under 120-310 A and added requirement to maintain records of receipt, shipment or treatment of RMW for at least three years. Added requirement for cart tippers, conveyors, and similar equipment to control movement and impact to maintain the integrity of the RMW packaging.
200, 210, 220, 240, 260.1	110	Packaging and Labeling of Regulated Medical Waste	Consolidation of 120-200, 210, 220, 230 240, and 260.1 with minor changes to language for clarification of RMW packaging and labeling requirements. Added requirement for waste packages not to be overfilled and conditions for conveying RMW in wheeled carts.

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
230	Deleted	Etiological agents	Section 230 is deleted here as the section of the federal regulations that used to define "etiologic agent" no longer exists (42 CFR 72 has been repealed). Reference to management of select agents or toxins (new term for etiological agents) added in 121-80.
170, 330 - 380	120*	<p>Storage of Regulated Medical Waste</p> <p>Storage requirements currently based on volume of RMW generated weekly (either less than 100 gallons or more than 100 gallons per week) and if amount of RMW stored onsite exceeds 200 gallon threshold.</p> <p>RMW stored more than seven days must be refrigerated with 15 day max onsite storage time.</p>	<p>Consolidation of 120-170, 330, 340, 350, 360, 370, 380. Per RAP consensus, the referenced storage limit was increased from 200 to 250 gallons and storage timeframes were changed:</p> <ul style="list-style-type: none"> <li>• Generators of less than 250 gal/month shall be on a monthly pick-up schedule, maximum 45 day hold</li> <li>• Generators of 250 gal/month or more shall be on a weekly pick-up schedule, maximum 10 day hold</li> <li>• Transfer Stations may store up to 7 days unrefrigerated, maximum of 15 day hold</li> <li>• Treatment Facilities shall treat or remove RMW on a weekly basis, maximum 10 day hold</li> </ul>
260 380	130*	Reusable Container Requirements	Consolidation of 120-260 & 380. Reusable cart cleaning standards revised per RAP information to provide flexibility while still maintaining minimum standards for disinfection. Added requirement for disinfectants to be EPA-registered with options to use heated rinse water with minimum temperature requirements or certain chemical sanitizers, as consistent with national industry guidance on cleaning of reusable containers.
270 280	140	Management of Spills of Regulated Medical Waste	Section was recodified and consolidated 120-270 & 280. Minor clarifications to existing disinfection requirements added, including requirement for disinfectants to be EPA-registered hospital grade disinfectants effective against mycobacteria unless an alternate EPA-registered disinfectant is demonstrated to be as protective of human health and appropriate for the type of RMW and surface being disinfected.
320	Deleted	Management of radioactive materials	Section 320 is deleted here. Reference to management of radioactive materials added in 121-80.

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
400 - 500	150	Transportation of Regulated Medical Waste	Consolidation of 120-400, 410, 420, 430, 440, 450, 460, 470, 490, and 500. Additional requirements added to clarify that transporters must comply with the general handling requirements (new 121-100) as well as US DOT HMR requirements. All other sections recodified with minor changes.
N/A	160**	Management of Category A Waste	New Section. Added requirements and best management practices for Category A Waste (a subset of RMW), referencing the federal guidance "Managing Solid Waste Contaminated with a Category A Infectious Substance" (see Documents incorporated by reference). Added storage, notification, and treatment requirements for Category A waste. Clarified that Category A waste treated in accordance with the special requirements of this section is no longer Category A waste or RMW and can be disposed of at a permitted solid waste disposal facility in accordance with the VSWMR.
<b>Part VII, VIII &amp; IX</b>	<b>Part IV</b>	<b>Standards for Regulated Medical Waste Transfer Stations and Treatment Facilities</b>	<b>This part describes the siting, design and construction, operation, and closure requirements for transfer and treatment facilities. Requirements specific to various RMW treatment methods included along with validation, challenge testing, and disposal of treated waste.</b>
160, 690.A.	200	General and Applicability	Outlines applicability of this Part to all RMW Transfer Stations and Treatment Facilities and their need for a permit. Format revision similar to VSWMR for analogous solid waste management (non-disposal) facilities.
N/A	210*	Siting Requirements	New Section. Incorporates siting criteria from the VSWMR applicable to all solid waste management (non-disposal) facilities for consistency.
N/A	220*	Design and Construction Requirements	New Section. Incorporates design and construction criteria from the VSWMR applicable to all solid waste management (non-disposal) facilities for consistency. Added requirements for suitable access road, queuing capacity, access controls, lighting, covered areas with cleanable and impermeable surfaces, drainage,

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
			water supply, fixed radiation detectors, sizing for sufficient storage capacity and designated areas for cleaning of reusable containers as applicable.
550, 610, 660	Deleted	Compliance with other parts of this chapter	Sections 550, 610, & 660 deleted here. Requirement for RMW treatment facilities to comply with all other RMW general handling requirements included in 121-230.
N/A	230*	Operation Requirements	New Section. Clarifies that all permitted RMW facilities must comply with the RMW general handling (new 121-100), packaging and labeling (new 121-110), storage (new 121-120), reusable carts (new 121-130), spill management (new 121-140) and transportation (new 121-150) requirements (consolidation of 120-550, 610, & 660). Adds requirements for operation in accordance with a Regulated Medical Waste Management Plan (see 121-330), implementation of a Control Program for Unauthorized Waste, use of radiation detection equipment, monthly self-inspections, and training consistent with VSWMR criteria applicable to all solid waste management (non-disposal) facilities for consistency.
300 A, 520, 530, 540, 580, 590, 630, 640	240*	Treatment Standards	Consolidation of RMW treatment standards found in former Parts VII, VIII, and IX. Removed requirement for shredding of RMW. Minimum operating parameters for autoclaves, microwaves, dry heat, and incineration updated to industry standards. New parameters added for alkaline hydrolysis. Chlorination standards removed; instead generic chemical treatment option allowed with alternate treatment technology approval. Updated spore inactivation requirement to 6 Log 10 reduction for consistency with industry standards. Additional requirements around use of biological indicators for equipment validation and challenge testing added including number, type and placement of biological indicators. Added requirements for handling RMW in treatment unit during power failure, interruption, or incomplete treatment cycle.

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
900, 910, 920, 930, 950	250	Alternate Treatment Technologies	Consolidation and recodification of 120-900 through 950. Clarification that alternate treatment technologies are subject to general treatment standards (new 121-240). Updated spore inactivation requirement to 6 Log 10 reduction for alternate treatment technologies (consistent with updated treatment standards, 121-240). For alternate treatment technology method reviews, the words “petition” and “petitioner” have been replaced with “application” and “applicant” and department review steps for applications have been added.
N/A	260*	Validation Testing	New Section. Section requires that all RMW treatment facilities perform equipment validation prior to beginning operation. Section outlines validation protocol to include number, location, type, and placement of biological indicators, number of test runs, process monitoring, reporting, and specifying when validation must be repeated (e.g. at least once every five years).
530.A.4, 590.2.a, 640.1.b.	270	Periodic Challenge Testing	Section was recodified. Also incorporates and updates treatment efficacy requirements from 120-530.A.4, 590.2.a, & 640.1.b. Clarifies requirements regarding number of biological indicators and recordkeeping. Updated challenge testing frequency to decrease over time with facility operation and passing test results (twice a day for the first 30 days of operation, weekly for the first six months of operation, and monthly after six months of operation). Added procedures for response following challenge test failure including how to handle the RMW in the failed load. The current requirement for periodic challenge testing is only one (1) challenge test (spore test) per month with only one (1) biological indicator in the waste load, regardless of the volume of waste treated per load. This doesn't allow for representative testing and was updated in the proposed regulation (as described above).

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
300.B, 540.C., 600, 650	280*	Disposal of Treated Waste	Consolidation of 120-300 B, 540 C, 600 and 650. Requirement for shredding of treated RMW removed. New requirement added for RMW treatment facilities to provide treated waste disposal plans to the solid waste transfer and disposal facilities to receive treated RMW that will specify how treated waste will be packaged, with additional options for packaging including clear bags and bags with sterilization indicators.
290, 730 D, 750	290	Closure Requirements	Consolidation of 120-290, 730 D, and 750. Addresses need for permitted facilities to maintain a Closure Plan including procedures for waste removal and facility cleaning and disinfection at closure. Closure procedures from VSWMR applicable to analogous solid waste management (non-disposal) facilities added.
<b>Part X</b>	<b>Part V</b>	<b>Permitting of Regulated Medical Waste Facilities</b>	<b>This part outlines all of the requirements needed to obtain a permit by rule for a regulated medical waste management facility. It also clarifies the requirements of the required Regulated Medical Waste Management Plan as well as recordkeeping and reporting requirements of the permittee.</b>
170, 180, 680, 690	300*	Applicability	Permit types and exemptions consolidated under new Part V. Added permit exemption for sharps drop boxes, RMW pre-treatment, sewage treatment systems, combustion of up to 10% by weight of RMW at a VSWMR permitted incinerator/waste to energy facility, and temporary RMW storage associated with emergency clean-up.
180, 690, 710, 720	310	Permits-by-rule and Emergency Permits	Removed on-site permit-by-rule (PBR) option; Clarify that all RMW Transfer Stations and Treatment Facilities are now required to have the same PBR. Removed Key Map, Near Vicinity Map, and adjacent property owner notification from PBR submission. Added requirements for public participation and submission of certifications and documents to make the RMW PBR application consistent with the VSWMR PBR submission requirements. Per new

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
			<p>121-40.B., all existing on-site or off-site/full PBR holders will have to submit new PBR applications.</p> <p>Added Emergency Permit type. Intent is that an Emergency Permit may be issued for the storage, transfer, or treatment of Category A waste or other applicable situation. Language mimics Emergency Permit option in VSWMR.</p>
740	320*	Effect of the Permit	Section was recodified. Added procedure for the department to approve RMW treatment facilities to begin operations (e.g. receive RMW for treatment) following equipment validation per new 121-260.
730	330*	Regulated Medical Waste Management Plan	<p>Section was recodified. The Regulated Medical Waste Management Plan (RMWMP) replaces the previous narrative, Operations Manual, and Emergency Contingency Plan outlined in 120-730. The RMWMP will include the following:</p> <ul style="list-style-type: none"> <li>• Waste Acceptance Plan;</li> <li>• Unauthorized Waste Control Plan;</li> <li>• Operations Plan;</li> <li>• Treatment Plan (if applicable);</li> <li>• Emergency Contingency Plan; and</li> <li>• Closure Plan</li> </ul> <p>On-site PBR holders were previously exempt from this requirement; as proposed, they will be required to develop and maintain a Regulated Medical Waste Management Plan.</p>
310, 540 B & C, 590 2 b, 640 1 c, 760	340	Recordkeeping and Reporting Required of a Permittee	Specifies recordkeeping and reporting requirements specific to RMW permitted facilities. Section was recodified and consolidates 120-310, 540 B & C, 590 2 b, 640 1 c, & 760. Removed requirement to maintain records listed under 310 A. Added requirements for submitting the annual Solid Waste Information and Assessment (SWIA) report, quarterly updates of Disclosure Statements, and maintenance of records regarding receipt of unauthorized waste and self-inspections.
810	deleted	Amendment of permits	Section 810 is deleted here. Revised wording from amendment to modification

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
			to be consistent with other DEQ programs. Procedures for temporary authorizations removed from regulation (not used). Procedures for permit modification included in 121-310 A 6.
820	deleted	Duration of permits	Deleted requirements for permit duration and renewal. Permits will be valid for the life of the facility, consistent with permits issued under the VSWMR.
830	Deleted	Existing facilities qualifications	Deleted section. Requirement for existing permitted facilities to submit new permit applications included in new 120-40.
<b>Part XI</b>	<b>Part VI</b>	<b>Variance Application Procedures</b>	<b>This part describes the procedures to follow when requesting a variance from this regulation. The words “petition” and “petitioner” have been replaced with “application” and “applicant”.</b>
840	400	General (variances)	Section was recodified. Removed listed item regarding non-acceptance of variance to the definitions of regulated medical waste. Section 121-90 addresses process for demonstrating that a material meets an exemption from regulation as regulated medical waste.
850, 860	410	Variances to Requirements	Consolidation of 120-850 & 860. Section was recodified. No other changes made.
870, 880, 890	420	Administrative Procedures	Consolidation of 120-870, 880, & 890. Section was recodified. No other changes made.
900	Deleted	General (alternate treatment technology)	Section 900 is deleted here and included in 121-250 A.
910	Deleted	Criteria for microbial inactivation	Section 910 is deleted here and included in 121-250 B.
920	Deleted	Representative biological indicators	Section 920 is deleted here and included in 121-250 C & D.
930	Deleted	Quantification of microbial inactivation	Section 930 is deleted here and included in 121-250 E & F.
940	Deleted	Efficacy testing protocols	Section 940 is deleted here and included in 121-260.
950	Deleted	Technology approval process	Section 950 is deleted here and included in 121-250 G.
960	Deleted	Site approval process	Section 960 is deleted here and included in 121-260 and 121-330.
970	Deleted	User verification	Section 970 is deleted here and included in 121-270
980	Deleted	Small medical waste treatment devices	Section 980 is deleted. Per RAP consensus, separate requirements for

Current chapter-section number 9VAC20-120-	New chapter-section number, if applicable 9VAC20-121-	Current requirement	Change, intent, rationale, and likely impact of new requirements
			small medical waste treatment devices were not needed.
990	Deleted	Waste residue disposal	Section 990 is deleted here. Information about alternate treatment technology waste residue is to be submitted with information required under 121-250.
1000	Deleted	Operator training	Section 1000 is deleted here. Requirements for training are addressed in 121-230 U.
FORMS	Forms		Link to revised DISC-01, DISC-02, CERT-01, and RMWTP-01. Adding new RMW PBR application form.
N/A	Documents Incorporated by Reference		Incorporating the most recent federal policy titled "Managing Solid Waste Contaminated with a Category A Infectious Substance." Document is referenced in new section 121-160.

**Table 1: Changes to Existing VAC Chapter(s)**

### Regulatory Flexibility Analysis

*Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) establishing less stringent compliance or reporting requirements; 2) establishing less stringent schedules or deadlines for compliance or reporting requirements; 3) consolidation or simplification of compliance or reporting requirements; 4) establishing performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the regulatory change.*

The proposed amendment includes the clarification and consolidation of compliance and reporting requirements; less stringent schedules for storage of regulated medical waste for generators of small quantities of RMW and following certain emergency cleanup activities; and includes the establishment of consolidated operational performance standards. Exemptions of certain wastes from the requirement to be managed as regulated medical waste will benefit small businesses that generate those wastes identified.

### Family Impact

*In accordance with § 2.2-606 of the Code of Virginia, please assess the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and*

*supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

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No impact on the institution of the family and family stability is anticipated as a result of this regulatory action.

Attachment A- Permitted RMW Treatment Facilities

Permit ID	Facility Name	Unit Type	Captive (Y/N)	Owner Type
PBR157	Old Dominion University - Norfolk	Autoclave	Yes	Public University
PBR159	University of Mary Washington - Fredricksburg	Autoclave	Yes	Public University
PBR167	University of Virginia Medical Center	Autoclave	Yes	Hospital
PBR168	George Mason University - Prince William Campus	Autoclave	Yes	Public University
PBR176	VDACS Lab -Warrenton	Autoclave	Yes	State Agency
PBR505	Microbac Laboratories Incorporated - Sterling	Autoclave	Yes	Private Lab
PBR552	Virginia Commonwealth University Medical Center	Autoclave	Yes	Hospital
PBR566	Virginia Hospital Center - Arlington	Chem-Clav	Yes	Hospital
PBR576	George Mason University - Fairfax Campus	Autoclave	Yes	Public University
PBR617	Curtis Bay Medical Waste Services - Petersburg	Autoclave	No	Private Treatment

Attachment B- Permitted RMW Transfer Stations

Permit ID	Facility Name	Unit Type	Captive (Y/N)	Owner Type
PBR143	Curtis Bay Medical Waste Services VA LLC - Roanoke	Transfer Station	No	Private
PBR517	Stericycle Chesterfield RMW Transfer Station	Transfer Station	No	Private
PBR606	Daniels Sharpsmart RMW Transfer Station	Transfer Station	No	Private
PBR624	Agape Pet Services of Virginia LLC	Transfer Station	No	Private
PBR634	Curtis Bay Medical Waste Services - Norfolk	Transfer Station	No	Private
PBR637	Sharps Compliance Inc	Transfer Station	No	Private

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-120 (repeal) 9VAC20-121 (new)
<b>VAC Chapter title(s)</b>	Regulated Medical Waste Management Regulations
<b>Action title</b>	Amendment 3
<b>Date this document prepared</b>	August 17, 2022

**Cost Benefit Analysis**

Table 1a must be completed for all actions. Tables 1b and 1c must be completed for actions (or portions thereof) where the agency is exercising discretion, including those where some of the changes are mandated by state or federal law or regulation. Tables 1b and 1c are not needed if **all** changes are mandated, and the agency is not exercising any discretion. In that case, enter a statement to that effect.

- (1) Direct Costs & Benefits: Identify all specific, direct economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (A direct impact is one that affects entities regulated by the agency and which directly results from the regulatory change itself, without any intervening steps or effects. For example, the direct impact of a regulatory fee change is the change in costs for these regulated entities.) When describing a particular economic impact, specify which new requirement or change in requirement creates the anticipated economic impact. Keep in mind that this is the proposed change versus the status quo. One bullet has been provided, add additional bullets as needed.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
  - (c) Enter the present value of the direct costs based on the worksheet.
  - (d) Enter the present value of the direct benefits based on the worksheet.
- (3) Benefits-Costs Ratio: Calculate d divided by c OR enter it from the worksheet.
- (4) Net Benefit: Calculate d minus c OR enter it from the worksheet.
- (5) Indirect Costs & Benefits: Identify all specific, indirect economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (An indirect impact is one that results from responses to the regulatory change, but which are not directly required by the regulation. Indirect impacts of a regulatory fee change on regulated entities could include a change in the prices they charge, changes in their operating procedures or employment levels, or decisions to enter or exit the regulated profession or market. Indirect impacts also include responses by other entities that have close economic ties to the regulated entities, such as suppliers or partners.) If there are no indirect costs or benefits, include a specific statement to that effect.

- (6) Information Sources: Describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (7) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

<p>(1) Direct Costs &amp; Benefits</p>	<p style="text-align: center;"><b><u>Costs</u></b></p> <ul style="list-style-type: none"> <li>• <b>Public Universities and Other State Agencies-</b> Public universities and state agencies (e.g. VDACS) with Regulated Medical Waste treatment units are considered particularly affected by the proposed amendments to the regulation. Additionally, there may be minor impacts on VDH, and DCLS as potential generators of RMW. (Please see Attachment A) No other state agencies are known to be particularly impacted by these regulations.</li> <li>• <b>RMW generators, transfer stations, and RMW treatment facilities</b> – RMW generators, transfer stations and treatment facilities located in the Commonwealth are considered particularly affected by the proposed amendments to the regulation. There are currently 16 permitted RMW transfer stations and treatment facilities in the Commonwealth. The proposed regulation also affects the universe of RMW generators which includes hospitals, doctor’s offices, clinics, and other healthcare facilities as well as veterinary establishments, labs, and research facilities, etc. The Agency does not have an estimate of the number of affected facilities under this category which likely includes a mix of small and large businesses.</li> </ul> <p>For RMW generators, the proposed regulation includes an additional requirement for the maintenance of shipping papers that may have an on-going administrative cost to maintain records for three years after shipment.</p> <p>Additional requirements in the proposed regulation that may have additional cost associated with them include the following:</p> <p style="text-align: center;"><b><u>Permit</u></b></p> <p>New RMW Treatment and Transfer Facilities will apply for a PBR (Facilities with existing PBRs may have to update their current PBR under certain circumstances) (9VAC20-121-40(B) and 9VAC20-121-300). This process will also include public participation. Requirement for permit renewal every 10 years would be eliminated.</p>
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**Estimated Cost of New Requirement:** Permit Fee (for new facilities and modifications of existing permitted facilities , Cost of Publication of Notice in Newspaper of General Circulation (for new facilities), Potential cost of additional staff time (or hired consultant) to prepare application, Annual Fee

**Handling, Operations**

All RMW must be handled in a manner that maintains the integrity of the packaging at all times. Cart tippers, conveyors, etc. must control movement and impact to maintain integrity of packaging (9VAC20-121-100(F))

RMW Transfer stations or treatment facilities shall maintain and operate in accordance with a regulated medical waste management plan that meets all the requirements of 9VAC20-121-330 (9VAC20-121-230(B))

Each facility shall conduct monthly inspections of all major aspects of the facility and maintain records of inspections onsite (9VAC20-121-230(U))

RMW Transfer stations and treatment facilities shall implement an unauthorized waste control program (9VAC20-121-230(K))

Radiation detection equipment shall be operated and maintained in a manner that ensures that all incoming waste is screened and the measurements are meaningful and fulfill the objectives for detecting radiologically contaminated waste (9VAC20-121-230(L))

**Estimated Cost of New Requirement:** Potential retrofits for facilities using cart tippers or slides or conveyors to ensure the movement of RMW is controlled to maintain the integrity of the packaging, potential cost of installation of a fixed radiation detector, if applicable and not already in place voluntarily, potential cost of additional staff time to conduct and document inspections.

No additional costs associated with a waste management plan, or unauthorized waste program are expected. These elements were components of existing requirements that will be clarified by the proposed regulation.

**Recordkeeping**

All RMW Facilities must maintain records onsite of receipt, shipment or treatment of all RMW for at least three years (9VAC20-121-100(I)(a) and 9VAC20-121-340)

All RMW Facilities shall maintain a RMW management plan in the operating record (9VAC20-121-340(D))

All RWM Facilities shall maintain inspection logs (9VAC20-121-340(K))

All RMW Facilities shall keep records of all Unauthorized Waste (9VAC20-121-340(J))

**Estimated Cost of New Requirement:** Majority of proposed record keeping requirements clarify or rename already existing requirements. No additional costs are expected as a result of proposed recordkeeping requirements.

**Treatment**

Prior to operation of any treatment unit, the facility must conduct validation testing in accordance with 9VAC20-121-320 and an approved treatment plan to establish the appropriate operating parameters for effective treatment of RMW (9VAC20-121-240(B)(8) and 9VAC20-121-260).

Periodic challenge testing shall be performed under full loading in accordance with 9VAC20-121-270 to evaluate the effectiveness of each treatment unit and method (9VAC20-121-240(B)(9) and 9VAC20-121-270).

**Estimated Cost of New Requirement:**

Additional cost for validation requirements, including costs for 4 to 12 biological indicators for each of three validation test runs and approximately 8 hours of additional staff time to complete the testing.

Challenge testing includes costs of 0 to 3 additional biological indicators per month beyond the current requirement, depending on the volume of waste treated. The number of biological indicators per month corresponds to the volume of waste treated per load. Staff time for performing challenge tests is not anticipated to be lengthened by the use of additional biological indicators.

**Benefits**

- **Public Universities and Other State Agencies-** Staff may benefit from increased efficiencies due to clearer and more streamlined regulations.
- **RMW generators, transfer stations, and RMW treatment facilities** –Amendments to the regulation are intended to benefit RMW generators by streamlining and reorganizing the regulation for ease of use and better understanding of the requirements. Consolidation of generator and management requirements as well as updating requirements to reflect current industry standards will greatly benefit program staff and regulated entities. Specifically, the proposed removal of the following requirements may result in a cost savings to regulated facilities:
  - Removal of requirement to shred treated RMW
  - Flexibility for treatment facilities to establish operating parameters specific to the treatment unit and waste stream

	<p>rather than defaulting to general regulatory performance standards for a particular treatment method</p> <ul style="list-style-type: none"> <li>○ Multiple options for the effective cleaning and disinfection of reusable containers</li> <li>○ Multiple options for packaging of treated RMW</li> <li>○ Removal of permit expirations after 10 years and required renewals. Permits will now be valid for the life of the facility, consistent with the VSWMR</li> <li>○ The addition of Category A waste management requirements will allow staff to better respond to the next emerging disease outbreak</li> <li>○ Adding validation procedures and improving period challenge testing requirements for RMW treatment facilities provide the benefit of helping to identify and correct any compliance issues with ineffective or failing treatment equipment sooner than would be expected under the existing regulation.</li> <li>○ Additional requirements for Category A Waste and testing of treatment units will also provide the benefit of better protections for human health</li> <li>○ Overall the proposed regulation will better protect human health and lower the risk and cost of exposure as a result of improperly managed RMW.</li> </ul> <p><b><u>Cost of Estimated Benefit:</u></b> Exact value of benefits is unknown at this time. Potential cost savings as a result of the proposed regulations include: saved staff time, elimination of potential civil charges, medical bills from potential exposures to RMW, potential cost of hiring a consultant. Based on information from NIH and the International Safety Center, total average medical costs associated with injuries and or illness from improper handling of sharps (31 incidents out of every 100 employees in 2021), as well as medical costs resulting from injuries and or illness associated with exposure to bodily fluids as a result of improper handling in 2021(11 incidents out of every 100 employees) cost approximately \$1,127,573 in 2021. By complying with regulations that are easier to understand and streamlined, it is estimated that employers could potentially benefit from an initial cost savings of approximately \$1,127, 573 in medical fees for injuries and illness associated with improper handling and management of RMW.</p>	
(2) Quantitative Factors	Estimated Dollar Amount	Present Value

Direct Costs	(a) Permit Fee- \$390 Public Notice Publication(Avg. of facilities most affected- \$200.00 Annual Fee- \$3,062.00 Cart Tipper Modification-\$0- 2,000 Radiation Detector-\$6,000- 8,000 Validation testing(at least once every 5 years-\$108-\$145 Challenge Testing-\$0-12 per month	(c) Total Present Value – 39,028	
Direct Benefits	(b) Potential benefits could include cost savings of medical bills associated with accidental exposure to infectious agents as a result of improper handling of RMW. Based on 2021 data, this could result in a cost savings of \$1,127, 573.	(d) Total Present Value- 1,127,573	
(3) Benefits- Costs Ratio	28.89	(4) Net Benefit	1,088,545
(5) Indirect Costs & Benefits	No indirect costs or benefits could be easily identified as a result of the proposed regulatory changes.		
(6) Information Sources	Current DEQ RMW PBR Permit Fee and RMW Annual Fees paid by regulated facilities, survey of regulated entities, Average cost of newspaper publication fee of regulated facilities, Online vendors of medical waste equipment (mcfenvironmental.com, consteryl.com, biosafeeng.com, globalindustrial.com, grainger.com, vitalitymedical.com, uline.com, bttusa.com, amscope.com, frontpointsecurity.com, synergymedco.com) Estimated Benefits- jhsph.edu, <a href="https://pubmed.ncbi.nlm.nih.gov">https://pubmed.ncbi.nlm.nih.gov</a> , internationalsafetycenter.org/exposure-reports/		
(7) Optional			

**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

*This table addresses current requirements and the implications of not making any changes. In other words, describe the costs and benefits of maintaining the current regulatory requirements as is.*

<p>(1) Direct Costs &amp; Benefits</p>	<p><b><u>Permit</u></b> Main permitting costs associated with preparing an application, permit fee for either a PBR(onsite) or full PBR (offsite), annual fee dependent on how much RMW is generated, potential publication in newspaper of general circulation <b>Estimated Cost of Requirement:</b> Permit Fee, Cost of Annual Fee, Cost of Publication of Notice in Newspaper of General Circulation, Potential cost of additional staff time (or hired consultant) to prepare application</p> <p><b><u>Handling/Storage/Operations</u></b> Main RMW handling requirements include: personal protective equipment for staff handling RMW, sharps containers for contaminated sharps, spill kits which include enough absorbent material to absorb 10 gallons per kit, one gallon of disinfectant, 500 red bags, carts for internal handling, key card access/locked areas for RMW storage, separate refrigerator if needed, opaque/orange bags for treated waste, red biohazard bags for RMW, hospital grade disinfectant <b>Estimated Cost of New Requirement:</b> Includes: cost of enough PPE for all staff handling RMW, cost of contents of spill kit (multiple if needed) which includes PPE, absorbent material, red bags, and disinfectant, adequate number of sharp disposal containers, cost of key card access/locked or other similar system, cost of individual refrigerator, cost of opaque/orange bags, cost of red biohazard bags, cost of carts, cost of hospital grade disinfectant</p> <p><b><u>Recordkeeping /Packaging/Labeling</u></b> Recordkeeping/packaging and labeling requirements associated with treated and untreated RMW, treatment and general handling requirements <b>Estimated Cost of New Requirement:</b> Potential cost of a regulatory compliance officer in the healthcare industry to complete recordkeeping requirements and conduct training, etc.</p> <p><b><u>Treatment</u></b> Cost of treatment will be dependent on if the facility in question treats its RMW on site and is also dependent on type of treatment used. Treatment could include chemical treatment, incineration, steam sterilization, or other alternate treatment technologies. <b>Estimated Cost of Requirement:</b></p>
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	<p>Cost of treatment dependent on method of treatment. Potential costs include: captial and maintenance costs associated with the treatment method employed.</p> <p><b><u>Closure &amp; Financial Assurance</u></b>          Cost of preparing closure plan, clean-up and removal of waste and treatment equipment, cost of FA mechanism, yearly adjustment of FA mechanism for inflation (FA required for privately owned facilities)  <b>Estimated Cost of Requirement:</b>          Cost of FA dependent on mechanism chosen and cost of closure of the facility in question</p>
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(2) Quantitative Factors	Estimated Dollar Amount	Present Value
Direct Costs	(a) Permit Fee- \$390 or \$4,310 Public Notice Publication(Avg. of facilities most affected-\$200.00 Annual Fee- \$3,062.00 PPE-\$313 per person Sharps Containers- 2 gallon sharp container-\$4.83 per container, \$92.94 per pack of 20 Spill Kit Contents- PPE-\$313 per person, Absorbent Material-\$44 per 10 gallon capacity Disinfectant – 1 gallon- \$29 per year Red Bags- Max 500- \$954 Key Card System- \$100 per door Separate Fridge- \$982 Opaque/Orange Bags- 7-10 gallon bags- \$63.78 per 200 bags Red Bags- 10 gallon bags- \$190.74 for 100 bags Wheeled Cart- \$189 per cart Average Cost of Incinerator- \$40,000 Average Cost of Steam Sterilization Unit- \$35,000	(c) Total Present Value- 641,772,183

	Operating Costs of Incineration/Steam Sterilization- .25 to \$1.00 per pound of waste Average FA of currently permitted treatment facilities- \$19,000 Average FA of currently permitted transfer facilities- \$16,451	
Direct Benefits	(b) There are no quantifiable direct benefits from the current regulations.	(d) There are no quantifiable direct benefits from the current regulations.
(3) Benefits-Costs Ratio	0	(4) Net Benefit -641,772,183
(5) Indirect Costs & Benefits		
(6) Information Sources	Current DEQ RMW PBR Permit Fee and RMW Annual Fees paid by regulated facilities, survey of regulated entities, Average cost of newspaper publication fee of regulated facilities, Online vendors of medical waste equipment (mcfenvironmental.com, consteril.com, biosafeeng.com, globalindustrial.com, grainger.com, vitalitymedical.com, uline.com, bttusa.com, amscope.com, frontpointsecurity.com, synergymedco.com)	
(7) Optional		

**Table 1c: Costs and Benefits under an Alternative Approach**

*This table addresses an alternative approach to accomplishing the objectives with different requirements. These alternative approaches may include the use of reasonably available alternatives in lieu of regulation, or information disclosure requirements or performance standards instead of regulatory mandates.*

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>There are no readily discernible alternatives to the existing or proposed regulation.</li> </ul>	
(2) Quantitative Factors	Estimated Dollar Amount	Present Value

Direct Costs	(a)	(c)	
Direct Benefits	(b)	(d)	
(3) Benefits-Costs Ratio		(4) Net Benefit	
(5) Indirect Costs & Benefits			
(6) Information Sources			
(7) Optional			

**Impact on Local Partners**

- (1) Describe the direct costs and benefits (as defined on page 1) for local partners in terms of real monetary costs and FTEs. Local partners include local or tribal governments, school divisions, or other local or regional authorities, boards, or commissions. If local partners are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
- (3) Indirect Costs & Benefits: Describe any indirect benefits and costs (as defined on page 1) for local partners that are associated with all significant changes. If there are no indirect costs or benefits, include a specific statement to that effect.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (5) Assistance: Identify the amount and source of assistance provided for compliance in both funding and training or other technical implementation assistance.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 2: Impact on Local Partners**

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>• No localities are known to be particularly impacted by these regulations. Localities will continue to have a role in local zoning</li> </ul>
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	decisions regarding the siting of RMW transfer stations and treatment facilities.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Information Sources	
(5) Assistance	
(6) Optional	

**Economic Impacts on Families**

- (1) Describe the direct costs and benefits (as defined on page 1) to a typical family of three (average family size in Virginia according to the U. S. Census) arising from any proposed regulatory changes that would affect the costs of food, energy, housing, transportation, healthcare, and education. If families are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe any indirect costs and benefits (as defined on page 1) to a typical family of three that are most likely to result from the proposed changes.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (5) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 3: Impact on Families**

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>Families will not be particularly impacted by these regulations.</li> </ul>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Information Sources	
(5) Optional	

**Impacts on Small Businesses**

- (1) Describe the direct costs and benefits (as defined on page 1) for small businesses. For purposes of this analysis, “small business” means the same as that term is defined in § 2.2-4007.1. If small businesses are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe the indirect benefits and costs (as defined on page 1) for small businesses that are most likely to result from the proposed changes.
- (4) Alternatives: Add a qualitative discussion of any equally effective alternatives that would make the regulatory burden on small business more equitable compared to other affected business sectors, and how those alternatives were identified.
- (5) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 4: Impact on Small Businesses**

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>Small businesses will not be affected by these regulations as the regulations pertain to RMW generators, transfer stations, and treatment facilities.</li> </ul>
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Alternatives	
(5) Information Sources	
(6) Optional	

**Changes to Number of Regulatory Requirements**

*For each individual VAC Chapter amended, repealed, or promulgated by this regulatory action, list (a) the initial requirement count, (b) the count of requirements that this regulatory package is adding, (c) the count of requirements that this regulatory package is reducing, (d) the net change in the number of requirements. This count should be based upon the text as written when this stage was presented for executive branch review. Five rows have been provided, add or delete rows as needed.*

**Table 5: Total Number of Requirements**

Chapter number	Number of Requirements			
	Initial Count	Additions	Subtractions	Net Change
9VAC20-120	243	5(Self Inspections, Radiation Detector,	2(Shredding, Permit Expiration every 10 years)	3

		Cart Tippers, Validation, Challenge Testing)		
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## COST BENEFIT ANALYSIS WORKSHEET

INTERIM v. July 28, 2022

Discount Rate:	3%	DO NOT CHANGE THIS NUMBER unless you wish to use a different
Time horizon:	10 years	

**Notes:**

1. Year 0 represents the current fiscal year
2. Options 1 & 2 below correspond to the two options in the grocery cart example. Option 3 below provides an
3. Replace the values in the green cells below with the expected costs and benefits for your analysis. Insert zero
4. The sections for options 2 and 3 must be filled out if the agency has any discretion over the proposed regulat

Year	Option 1		Option 2		Option 3	
	Cost	Benefit	Cost	Benefit	Cost	Benefit
0	13,941	1,127,573	73,093,630	0	0	0
1	3,206	0	73,037,580	0	0	0
2	3,206	0	73,037,580	0	0	0
3	3,206	0	73,037,580	0	0	0
4	3,206	0	73,037,580	0	0	0
5	3,351	0	73,037,580	0	0	0
6	3,206	0	73,037,580	0	0	0
7	3,206	0	73,037,580	0	0	0
8	3,206	0	73,037,580	0	0	0
9	3,206	0	73,037,580	0	0	0
<b>TOTAL</b>	42,940	1,127,573	730,431,850	0	0	0

<b>Present Value</b>						
Year	Option 1		Option 2		Option 3	
	Cost	Benefit	Cost	Benefit	Cost	Benefit
0	13,941	1,127,573	73,093,630	0	0	0
1	3,113	0	70,910,272	0	0	0
2	3,022	0	68,844,924	0	0	0
3	2,934	0	66,839,732	0	0	0
4	2,848	0	64,892,944	0	0	0
5	2,891	0	63,002,858	0	0	0
6	2,685	0	61,167,823	0	0	0
7	2,607	0	59,386,236	0	0	0
8	2,531	0	57,656,540	0	0	0
9	2,457	0	55,977,223	0	0	0
<b>TOTAL</b>	39,028	1,127,573	641,772,183	0	0	0

	Option 1	Option 2	Option 3
Benefit-Cost Ratio	28.89	0	#DIV/0!
Net Benefit	1,088,545	-641,772,183	0

ent discount rate; if so, please make a note of this on the Economic Impact form and provide a rationale

example where costs and benefits vary from year to year.

0) for years where no costs or benefits are expected.

tory changes. Use "Option 2" for the status quo and "Option 3" for one other alternative.

## Project 5395 - Proposed

## Virginia Waste Management Board

## RMW Amendment 3

## Chapter 120

REGULATED MEDICAL WASTE MANAGEMENT REGULATIONS (REPEALED)**9VAC20-120-10. Definitions. (Repealed.)**

## Part I-

## Definitions

~~The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise. Chapter 14 (§ 10.1-1400 et seq.) of Title 10.1 of the Code of Virginia defines words and terms that supplement those in this chapter. The Solid Waste Management Regulations, 9VAC20-81, define additional words and terms that supplement those in the statutes and this chapter. When the statutes, as cited, and the solid waste management regulations, as cited, conflict, the definitions of the statutes are controlling.~~

~~"Act" or "regulations" means the federal or state law or regulation last cited in the context, unless otherwise indicated.~~

~~"Alternative treatment method" means a method for the treatment of regulated medical waste that is not incineration or steam sterilization (autoclaving).~~

~~"Approved sanitary sewer system" means a network of sewers serving a facility that has been approved in writing by the Virginia Department of Health, including affiliated local health departments. Such sewer systems may be approved septic tank/drainfield systems and on-site treatment systems, or they may be a part of a collection system served by an NPDES permitted treatment works.~~

~~"Associated" means two or more firms that share staff members, management, directors, and assets or engage in joint ventures. Holding companies and part owners are associated parties.~~

~~"Ash" means the residual waste material produced from an incineration process or any combustion.~~

~~"ASTM" means the American Society For Testing and Materials.~~

~~"Autoclave tape" means tape that changes color or becomes striped when subjected to temperatures that will provide sterilization of materials during treatment in an autoclave or similar device.~~

~~"Blood" means human blood, human blood components, and products made from human blood.~~

~~"Board" means the Virginia Waste Management Board.~~

~~"Body fluids" means liquid emanating or derived from humans including blood; cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; semen and vaginal secretions; amniotic fluid; urine; saliva in dental procedures; and any other body fluids that are contaminated with blood, and any other liquids emanating from humans that may be mixed or combined with body fluids.~~

~~"Closure" means the act of securing a regulated medical waste management facility pursuant to the requirements of these regulations.~~

~~"Closure plan" means the plan for closure prepared in accordance with the requirements of this chapter.~~

~~"Commonwealth" means the Commonwealth of Virginia.~~

~~"Container" means any portable enclosure in which a material is stored, transported, treated, or otherwise handled.~~

~~"Contaminated" means the presence or the reasonably anticipated presence of blood or other body fluids on an item or surface.~~

~~"Contingency plan" means a document setting out an organized, planned and coordinated course of action to be followed in the event of a fire, explosion, or release of regulated medical waste or regulated medical waste constituents that could threaten human health or the environment.~~

~~"CWA" means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act), 33 USC § 1251 et seq.; PL 92-500, PL 93-207, PL 93-243, PL 93-592, PL 94-238, PL 94-273, PL 94-558, PL 95-217, PL 95-576, PL 96-148, PL 96-478, PL 96-483, PL 96-510, PL 96-561, PL 97-35, PL 97-117, PL 97-164, PL 97-216, PL 97-272, PL 97-440, PL 98-45, PL 100-4, PL 100-202, PL 100-404, and PL 100-668.~~

~~"Decontamination" means the use of physical or chemical means to remove, inactivate, or destroy human pathogens on a surface or item to the point where they are no longer capable of transmitting~~

disease and the surface or item is rendered safe for handling, use, or disposal.

"Department" means the Virginia Department of Environmental Quality.

"Director" means the Director of the Department of Environmental Quality or his designee.

"Discard" means to throw away or reject. When a material is soiled, contaminated or no longer usable and it is placed in a waste receptacle for disposal or treatment prior to disposal, it is considered discarded.

"Discharge" or "waste discharge" means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of regulated medical waste into or on any land or state waters.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that such solid waste or any constituent of it may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

"Disposal facility" means a facility or part of a facility at which solid waste is intentionally placed into or on any land or water, and at which the solid waste will remain after closure.

"Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

"Empty" means wastes have been removed from a container using the practices commonly employed to remove materials of that type.

"EPA" means the U.S. Environmental Protection Agency.

"Etiologic agents" means the specific organisms defined to be etiologic agents in 42 CFR 72.3. In general, etiologic agents as defined in 42 CFR 72.1 means a viable microorganism or its toxin which causes or may cause human disease.

"Federal agency" means any department, agency, or other instrumentality of the federal government, any independent agency, or establishment of the federal government including any government corporation and the Government Printing Office.

"Generate" means to cause waste to become subject to regulation. When regulated medical waste is first discarded, it must be appropriately packaged in accordance with this regulation. At the point a regulated medical waste is discarded it has been generated.

Note: Timeframes associated with storage and refrigeration are no longer linked to the "date of generation."

"Generator" means any person, by site location, whose act or process produces regulated medical waste identified or listed in Part III (9VAC20-120-80 et seq.) of this chapter or whose act first causes a regulated medical waste to become subject to this chapter.

"Hazardous material" means a substance or material that has been so designated under 49 Parts CFR 171 and 173.

"Hazardous waste" means any solid waste defined as a "hazardous waste" by the Virginia Hazardous Waste Management Regulations.

"Health Care Professional" means a medical doctor or nurse practicing under a license issued by the Department of Health Professions.

"Highly leak resistant" means that leaks will not occur in the container even if the container receives severe abuse and stress, but remains substantially intact.

"Highly puncture resistant" means that punctures will not penetrate the container even if the container receives severe abuse and stress, but remains substantially intact.

"Motor vehicle" means a vehicle, machine, roll off container, tractor, trailer, or semi-trailer, or any combination of them, propelled or drawn by mechanical power and used in transportation or designed for such use.

"Nonstationary health care providers" means those persons who routinely provide health care at locations that change each day or frequently. This term includes traveling doctors, nurses, midwives, and others providing care in patients' homes, first aid providers operating from emergency vehicles, and mobile blood service collection stations.

"NPDES" or "National Pollutant Discharge Elimination System" means the national program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits pursuant to §§ 307, 402, 318, and 405 of the Clean Water Act. The term includes any state or interstate program that has been approved by the Administrator of the United States Environmental Protection Agency.

"Off-site" means any site that does not meet the definition of on-site as defined in this part, including areas of a facility that are not on geographically contiguous property or outside of the boundary of the site.

"On-site" means the same or geographically contiguous property, which may be divided by public or private right-of-way, provided the entrance and exit to the facility are controlled by the owner or the operator of the facility. Noncontiguous properties owned by the same person but connected by a right-of-way that he controls and to which the public does not have access are also considered on-site property.

~~"Owner" means the person or persons who own a regulated medical waste management facility or part of a regulated medical waste management facility.~~

~~"Package" or "outside package" means a package plus its contents.~~

~~"Packaging" means the assembly of one or more containers and any other components necessary to assure compliance with minimum packaging requirements under VRGTHM or this chapter.~~

~~"Permit by rule" means provisions of this chapter stating that a facility or activity is deemed to have a permit if it meets the requirements of the provision.~~

~~"Permitted waste management facility" or "permitted facility" means a regulated medical waste treatment or storage facility that has received a permit in accordance with the requirements of the chapter.~~

~~"Physical construction" means excavation, movement of earth, erection of forms or structures, the purchase of equipment, or any other activity involving the actual preparation of the regulated medical waste management facility.~~

~~"Processing" means preparation, treatment, or conversion of regulated medical waste by a series of actions, changes, or functions that bring about a decided result.~~

~~"RCRA" means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 USC § 6901 et seq.), the Hazardous and Solid Waste Amendments of 1984, and any other applicable amendments to these laws.~~

~~"Regulated medical waste" means solid wastes defined to be regulated medical wastes in Part III (9VAC20-120-80 et seq.) of this chapter.~~

~~"Regulated medical waste management" means the systematic administration of activities that provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of regulated medical wastes whether or not such facility is associated with facilities generating such wastes or otherwise.~~

~~"Regulated medical waste management facility" means a solid waste management facility that manages regulated medical waste.~~

~~"Safe sharps program" means a program supported by a city, county, town or public authority that is intended to enhance the safe disposal of sharps discarded by private individuals.~~

~~"Sanitary sewer system" means a system for the collection and transport of sewage, the construction of which was approved by the Department of Health or other appropriate authority.~~

~~"Secondary container" means a storage device into which a container can be placed for the purpose of containing any leakage from the original container.~~

~~"Section" means a subpart of this chapter and when referred to all portions of that part apply.~~

~~"Sharps" means needles, scalpels, knives, syringes with attached needles, pasteur pipettes and similar items having a point or sharp edge or that are likely to break during transportation and result in a point or sharp edge.~~

~~"Shipment" means the movement or quantity conveyed by a transporter of a regulated medical waste between a generator and a designated facility or a subsequent transporter.~~

~~"Site" means the land or water area upon which a facility or activity is physically located or conducted, including but not limited to adjacent land used for utility systems such as repair, storage, shipping, or processing areas, or other areas incident to the controlled facility or activity.~~

~~"Solid waste" means any garbage, refuse, sludge and other discarded material, including solid, liquid, semisolid or contained gaseous material, resulting from industrial, commercial, mining and agriculture operations, or community activities, but does not include (i) solid or dissolved material in domestic sewage, (ii) solid or dissolved material in irrigation return flows or in industrial discharges which are sources subject to a permit from the State Water Control Board, or (iii) source, special nuclear, or by product material as defined by the Federal Atomic Energy Act of 1954, as amended 42 USC §§ 2011-2284. The definition of solid waste is further clarified in the Solid Waste Management Regulations (9VAC20-81-95).~~

~~"Solid waste management" means the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid wastes or resource recovery.~~

~~"Spill" means any accidental or unpermitted discharge, leaking, pumping, pouring, emitting, or dumping of wastes or materials that, when spilled, become wastes.~~

~~"Start-up" or "cold start-up" means the beginning of a combustion operation from a condition where the combustor unit is not operating and less than 140°F in all areas.~~

~~"Storage" means the holding, including during transportation, of more than 200 gallons of waste, at the end of which the regulated medical waste is treated or stored elsewhere.~~

~~"Training" means formal instruction, supplementing an employee's existing job knowledge, designed to protect human health and the environment via attendance and successful completion of a course of~~

~~instruction in regulated medical waste management procedures, including contingency plan implementation, relevant to those operations connected with the employee's position at the facility.~~

~~"Transfer facility" means any transportation related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of regulated medical waste are held during the normal course of transportation.~~

~~"Transportation" or "transport" means the movement of regulated medical waste by air, rail, highway, or water.~~

~~"Transport vehicle" means any vehicle used for the transportation of cargo.~~

~~"Vector" means a living animal, insect or other arthropod that may transmits an infectious disease from one organism to another.~~

~~"VRGTHM" means Virginia Regulations Governing the Transportation of Hazardous Materials promulgated by the Virginia Waste Management Board as authorized by §§ 10.1-1450 through 10.1-1454 of the Code of Virginia.~~

~~"Waste management facility" means all contiguous land and structures, other appurtenances, and improvements on them used for treating, storing, or disposing of waste.~~

~~"Waste management unit" means any unit at a treatment or storage facility that possesses a permit, or that has received regulated medical waste (as defined in this chapter) at any time, including units that are not currently active.~~

#### **9VAC20-120-30. Purpose of regulations. (Repealed.)**

~~The purpose of these regulations is to establish standards and procedures pertaining to regulated medical waste management in this Commonwealth in order to protect the public health and public safety, and to enhance the environment and natural resources.~~

#### **9VAC20-120-40. Administration of regulations. (Repealed.)**

~~A. The Virginia Waste Management Board promulgates and enforces regulations that it deems necessary to protect the public health and safety, the environment, and natural resources.~~

~~B. The Virginia Waste Management Board and/or the director may enforce the provisions of this chapter utilizing all applicable procedures under the law.~~

#### **9VAC20-120-50. Applicability of regulations. (Repealed.)**

~~A. This chapter applies to all persons who manage regulated medical waste, own or operate regulated medical waste management facilities or allow regulated medical waste management facilities to be operated on their property in this Commonwealth, to those who seek approval to engage in these activities and to all persons who manage regulated medical wastes, except those specifically exempted or excluded elsewhere in this chapter.~~

~~B. All existing regulated medical waste management facilities must comply with this chapter.~~

~~C. By December 16, 2002, all permitted regulated medical waste management facilities will place in their operating record updated design and operation information in accordance with the requirements of 9VAC20-120-730.~~

~~D. All existing regulated medical waste management facilities in possession of a permit issued by the director are now deemed to be operating under the provisions of permit by rule. Any modification, transfer, violation or termination of the permit will be in accordance with the procedures specified for permit by rule.~~

#### **9VAC20-120-60. Severability. (Repealed.)**

~~A. The board intends that these regulations be severable, so that if any provision or part of these regulations is held invalid, unconstitutional or inapplicable to any person or circumstances, such invalidity, unconstitutionality or inapplicability shall not affect or impair the remaining provisions of these regulations and their application.~~

~~B. This chapter supersedes and replaces all previous regulations of the Waste Management Board to the extent that those prior regulations conflict with the regulations presented here. Where there does not exist a conflict between the prior regulations and those presented here, no replacement shall be deemed to occur and the prior regulations shall remain. This chapter supersedes and replaces in their entirety the following previous rules of the board: "Infectious Waste Management Regulations," effective May 2, 1990; "Regulated Medical Waste Management Regulations," effective June 30, 1993; and "Regulated Medical Waste Management Regulations," effective June 29, 1994.~~

~~C. This chapter shall remain in effect unless amended, rescinded, or otherwise altered by the Virginia Waste Management Board. Where there appears to be a conflict between this chapter and other regulations adopted at a future date, and such future regulations do not specifically clarify this chapter, this chapter shall be controlling.~~

~~D. These regulations are completely separate from all federal or local governmental regulations.~~

**9VAC20-120-70. Relationship to other bodies of regulation. (Repealed.)**

~~A. The Solid Waste Management Regulations (9VAC20-81) address other requirements for regulated medical waste management. Any regulated medical waste management facility must also conform to any applicable sections of the solid waste management regulations issued by the board and any special solid waste management regulations such as those defining financial assurance requirements. If there is a conflict between the details of regulations here and the others, this chapter is controlling.~~

~~B. Regulated medical waste management facility must also comply with any applicable sections of the Hazardous Waste Management Regulations (9VAC20-60) issued by the department. If there is a conflict between the details of regulations here and the hazardous waste management regulations, the latter regulations are controlling.~~

~~C. Intrastate shipment of hazardous materials is subject to the Regulations Governing the Transportation of Hazardous Materials (9VAC20-110) of the department. If there is a conflict between the details of regulations here and the hazardous materials transportation regulations, the latter are controlling.~~

~~D. Generators of regulated medical waste and regulated medical waste management facilities may be subject to the general industry standard for occupational exposure to bloodborne pathogens in 16VAC25-90-1910.1030 (29 CFR 1910.1030).~~

~~E. Persons transporting regulated medical waste are subject to the federal hazardous material transportation requirements in 49 CFR 171 through 178.~~

~~F. If there is a conflict between the regulations here and adopted regulations of another agency of the Commonwealth, the provisions of these regulations are set aside to the extent necessary to allow compliance with the regulations of the other agency. If neither regulation controls, the more stringent standard applies.~~

~~G. Nothing here either precludes or enables a local governing body to adopt ordinances. Compliance with one body of regulation does not insure compliance with the other, and, normally, both bodies of regulation must be complied with fully.~~

**9VAC20-120-80. Purpose and scope. (Repealed.)**~~Part III~~~~Identification and Listing of Regulated Medical Wastes~~~~Article 1~~~~General~~

~~A. This part contains general provisions in 9VAC20-120-80 and 9VAC20-120-90, provisions for recycling of regulated medical wastes in 9VAC20-120-100, provisions for conditional exemption from regulation in 9VAC20-120-110, a description of persons exempt in all or in part from the regulations in 9VAC20-120-120, a description of waste and materials excluded from consideration in these regulations in 9VAC20-120-130, and the definition of regulated medical waste in 9VAC20-120-140 and 9VAC20-120-150.~~

~~B. Wastes identified in this part are regulated medical wastes and are subject to this chapter, the Virginia Regulated Medical Waste Management Regulations.~~

~~C. The basic definition of solid waste appears in 9VAC20-120-10 along with other pertinent definitions and shall be referred to for the exact meaning of the terms used. Additional detailed descriptions of regulated medical wastes, exclusions and listings required to arrive at the proper classification of wastes are the subject of this part.~~

**9VAC20-120-90. Materials rendered nonregulated. (Repealed.)**

~~Wastes that were once regulated and managed in accord with this chapter, and that are no longer regulated medical waste, shall be managed in accordance with such other regulations of the board that apply.~~

~~1. Packaging. Treated waste that was once regulated, but is no longer regulated medical waste, shall not be packaged as regulated medical waste. Solid waste packaged as regulated medical waste is regulated medical waste.~~

~~2. Recordkeeping. If the solid waste is no longer regulated medical waste because of treatment, the generator and the permitted facility shall maintain a record of the treatment for three years after treatment to include the date and type of treatment, type and amount of regulated medical waste treated, and the individual operating the treatment unit. Records for on-site treatment and shipping papers from commercial carriers for off-site treatment shall be maintained by the generator. Records for off-site treatment and shipping papers for off-site treatment shall be maintained by all permitted facilities. Generators or permitted facilities with more than one unit may maintain a centralized system of recordkeeping. All records shall be available for review by the department upon request.~~

**9VAC20-120-100. Recycled materials. (Repealed.)**

A. ~~Untreated regulated medical wastes shall not be used, reused, or reclaimed.~~

B. ~~Wastes that have been treated in accord with these regulations are no longer regulated medical waste and may be used, reused, or reclaimed in accordance with the provisions of the Solid Waste Management Regulations (9VAC20-81).~~

C. ~~Bed linen, instruments, medical care equipment and other materials that are routinely reused for their original purpose are not subject to these regulations until they are discarded and are a solid waste. These items do not include reusable carts or other devices used in the management of regulated medical waste (see 9VAC20-120-260).~~

**9VAC20-120-110. Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation. (Repealed.)**

~~Respondents in actions to enforce this chapter who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, shall demonstrate that they meet the terms of the exclusion or exemption. In doing so, they shall provide appropriate documentation to demonstrate that the material is not a waste, or is exempt from regulation.~~

**9VAC20-120-120. Exemptions to the regulations. (Repealed.)****Article 2-****Exemptions and Exclusions**

~~Exemptions to this chapter include:~~

- ~~1. Composting of sewage sludge at the sewage treatment plant of generation and not involving other solid wastes.~~
- ~~2. Land application of wastes regulated by the State Board of Health, the State Water Control Board, the Virginia Department of Agriculture and Consumer Services, or any other state agency with such authority.~~
- ~~3. Wastewater treatment or pretreatment facilities permitted by the State Water Control Board by a NPDES permit.~~
- ~~4. Management of hazardous waste as defined and controlled by the Virginia Hazardous Waste Management Regulations to the extent that any requirement of those regulations is in conflict with regulations here.~~

**9VAC20-120-130. Exclusions. (Repealed.)**

A. ~~Materials described in this section may be partially or totally excluded from these regulations because they are not solid waste, not regulated medical waste or are regulated medical waste the board excludes from this chapter.~~

B. ~~The following materials are not solid wastes for the purposes of this part:~~

- ~~1. Domestic sewage, including wastes that are not stored and are disposed of in a sanitary sewer system (with or without grinding);~~
- ~~2. Any mixture of domestic sewage and other wastes that pass through a sewer system to a wastewater treatment works permitted by the State Water Control Board or the State Department of Health;~~
- ~~3. Human remains under the control of a licensed physician or dentist, when the remains are being used or examined for medical purposes and are not solid wastes;~~
- ~~4. Human remains properly interred in a cemetery or in preparation by a licensed funeral director or embalmer for such interment or cremation; and~~
- ~~5. Dead or diseased animals subject to regulation by the Virginia Department of Agriculture and Consumer Services.~~

C. ~~The following solid wastes are not regulated medical wastes:~~

- ~~1. Meat or other food items being discarded because of spoilage or contamination, and not included in 9VAC20-120-150.~~
- ~~2. Garbage, trash, and sanitary waste from septic tanks and sewage holding tanks that has been generated at any of the following locations: single or multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campground, picnic grounds and day-use recreation areas, except for regulated medical waste resulting from the provision of professional health care services on the premises, provided that all medical sharps discarded at those locations are placed in an opaque container with a high degree of puncture resistance and labeled "do not recycle, medical sharps" or otherwise managed in accordance with a local "safe sharps" program before being mixed with other wastes or disposed.~~

~~3. Used products for personal hygiene, such as diapers, facial tissues and sanitary napkins, underpads and adult incontinence products, unless a health care professional has determined these items to be regulated medical wastes in accordance with 9VAC20-120-140.~~

~~4. The following discarded items, when they are empty: urine collection bags and tubing, suction canisters and tubing, IV solution bags and tubing, colostomy bags, ileostomy bags, urostomy bags, plastic fluid containers, enteral feeding containers and tubing, hemovacs, and urine specimen cups, unless the items are subject to regulation under 16VAC25-90-1910.1030 (29 CFR 1910.1030) or comparable state or federal standard.~~

~~5. The following discarded items: urinary catheters, suction catheters, plastic cannula, IV spikes, nasogastric tubes, oxygen tubing and cannula, ventilator tubing, enema bags and tubing, enema bottles, thermometer probe covers, irrigating feeding syringes, and bedpans/urinals, unless the items are subject to regulation under 16VAC25-90-1910.1030 (29 CFR 1910.1030) or comparable state or federal standard.~~

~~6. Items such as bandages, gauze, or cotton swabs or other similar absorbent materials unless at any time following use they are saturated or would release human blood or human body fluids in a liquid or semiliquid state if compressed. Items that contain or that are caked with dried human blood or human body fluids and are capable of releasing these materials during handling are regulated medical waste. An item would be considered caked if it could release flakes or particles when handled.~~

### **9VAC20-120-140. Characteristics of regulated medical waste. (Repealed.)**

#### ~~Article 3-~~

#### ~~Characteristics~~

~~A solid waste is a regulated medical waste if it meets either of the two criteria of this section:~~

~~1. Any solid waste, as defined in this chapter is a regulated medical waste if it is suspected by the health care professional in charge of being capable of producing an infectious disease in humans. A solid waste shall be considered to be capable of producing an infectious disease if it has been or is likely to have been contaminated by an organism likely to be pathogenic to healthy humans, such organism is not routinely and freely available in the community, and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. If the exact cause of a patient's illness is unknown, but the health care professional in charge suspects a contagious disease is the cause, the likelihood of pathogen transmission shall be assessed based on the pathogen suspected of being the cause of the illness.~~

~~2. Any solid waste that is not excluded from regulation is a regulated medical waste if it is listed in 9VAC20-120-150.~~

### **9VAC20-120-150. Lists of controlled regulated medical wastes. (Repealed.)**

#### ~~Article 4-~~

#### ~~Controlled Regulated Medical Wastes~~

~~In addition to wastes described by the characteristics set forth in 9VAC20-120-140, each solid waste or solid waste stream on the following lists is subject to this chapter, unless exempted in 9VAC20-120-120 or excluded in 9VAC20-120-130.~~

~~1. Cultures and stock of microorganisms and biologicals. Discarded cultures, stocks, specimens, vaccines and associated items likely to have been contaminated by them are regulated medical wastes if they are likely to contain organisms likely to be pathogenic to healthy humans. Discarded etiologic agents are regulated medical waste. Wastes from the production of biologicals and antibiotics likely to have been contaminated by organisms likely to be pathogenic to healthy humans are regulated medical wastes.~~

~~2. Human blood and human body fluids. Wastes consisting of human blood or human body fluids or items contaminated with human blood or human body fluids.~~

~~3. Tissues and other anatomical wastes. All human anatomical wastes and all wastes that are human tissues, organs, or body parts are regulated medical waste.~~

~~4. Sharps. Sharps likely to be contaminated with organisms that are pathogenic to healthy humans, and all needles, syringes with attached needles, suture needles, and scalpels are regulated medical wastes. This includes sharps generated through veterinary practice.~~

~~5. Animal carcasses, body parts, bedding and related wastes. When animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials or any other reason; the animal carcasses, body parts, bedding material and all other wastes likely to have been contaminated are regulated medical wastes when discarded, disposed of or placed in accumulated storage.~~

~~6. Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any regulated medical waste.~~

~~7. Any solid waste contaminated by or mixed with regulated medical waste.~~

**9VAC20-120-160. Permit required. (Repealed.)**

~~Part IV~~

~~General Requirements~~

~~Article 1~~

~~Permits and On-site Permits by Rule~~

~~No person who is subject to this chapter shall treat, store, or dispose of regulated medical waste without a permit from the department to engage in those activities. Any person required to have a permit for the management of regulated medical waste shall submit an application for a permit in accord with Part X (9VAC20-120-680 et seq.) of this chapter, with the exception that certain facilities deemed to have an on-site permit by rule in accordance with 9VAC20-120-180.~~

**9VAC20-120-170. Exemptions from permitting. (Repealed.)**

~~A. The holding of regulated medical waste on loading docks or areas designated for loading shall not require an on-site permit by rule or a permit under Part X (9VAC20-120-680 et seq.) of this chapter if:~~

~~1. The regulated medical wastes are packaged, marked, and labeled for transport in accordance with applicable requirements of subdivision 4 of 9VAC20-120-210.~~

~~2. The facility merely facilitates transportation and does not involve holding of regulated medical waste for more than 24 hours.~~

~~3. No more than 25% of the regulated medical waste at the loading dock is generated off-site.~~

~~4. While regulated medical waste is present, the area is secure from unauthorized access, and means are provided to prevent damage to the packaging by the elements or other factors.~~

~~B. Facilities generating 100 gallons per week or more of regulated medical waste shall not be required to hold an on-site permit by rule for storage or a permit for storage under Part X of this chapter if:~~

~~1. A designated storage area is provided for all areas of the facility accumulating in excess of 200 gallons of regulated medical waste. Designated storage areas shall meet the special requirements for storage facilities in Part V (9VAC20-120-330 et seq.) of this chapter.~~

~~2. All regulated medical waste stored in a designated storage area is properly packaged in accordance with the provisions of 9VAC20-120-210 and labeled in accordance with the provisions of 9VAC20-120-220.~~

~~3. While regulated medical waste is in storage, the first date the RMW is placed in storage is affixed to the outer packaging.~~

~~4. No more than 25% of the regulated medical waste received at the facility is generated off-site.~~

~~5. Regulated medical waste is not treated on-site.~~

~~C. Facilities generating less than 100 gallons per week of regulated medical waste shall not be required to hold an on-site permit by rule for storage or a permit for storage under Part X of this chapter or maintain records as required under 9VAC20-120-310 if:~~

~~1. Regulated medical waste is not held on-site in quantities greater than 200 gallons.~~

~~2. Regulated medical waste is accumulated and held in a safe and secure manner ensuring the waste cannot spill, or contact workers or the general public.~~

~~3. When regulated medical waste is ready to be discarded, the generator complies with the provisions for loading docks or areas designated for loading in 9VAC20-120-170 A.~~

~~4. Regulated medical waste is not treated on-site.~~

~~D. If a facility does not meet the above requirements for the storage of regulated medical waste, that facility is required to obtain an on-site permit by rule for on-site storage in accordance with the provisions of 9VAC20-120-180.~~

**9VAC20-120-180. Persons qualifying for an on-site permit by rule. (Repealed.)**

~~Qualifying facilities are deemed to operate under a permit for regulated medical waste management activities and their owners or operators are not required to comply with the permit issuance procedures of Part X (9VAC20-120-680 et seq.) of this chapter. While persons who own or operate qualifying facilities are not subject to Part X or required to have a written permit from the department for those qualifying facilities, they are subject to this chapter and all other parts thereof. If a person owns or operates a regulated medical waste management unit that does not qualify for an on-site permit by rule, that person must comply with Part X and all other parts of this chapter for those units, without regard to the presence of any other units on the site that are operated under a permit by rule. Only those units that are in complete compliance with all~~

~~the following conditions are qualified and considered to be under an on-site permit by rule for their operation, and no on-site permit by rule shall exist for a facility failing to fulfill any of the following conditions:~~

- ~~1. The facility and all regulated medical waste activities are in compliance with all parts of this chapter except Part X.~~
- ~~2. More than 75% (by weight, in a calendar year) of all regulated medical waste that is stored, treated or disposed of by the facility is generated on-site.~~
- ~~3. No regulated medical waste is transported from or received by the facility without being properly packaged and labeled in accordance with this chapter. Facilities storing regulated medical waste will indicate the first date that the waste was placed in storage date on the outer packaging of the regulated medical waste.~~
- ~~4. The activities at the facility do not involve the placing of regulated medical waste directly into or on the land.~~
- ~~5. The owner or operator of the facility has notified the director in writing that the facility is operating under an on-site permit by rule. The notice shall give the name of the facility; the mailing address of the facility; the location address of the facility; the type of business the facility serves; the type of facilities (treatment, storage, transportation, disposal) involving regulated medical waste; and the name, address and telephone number of the responsible party indicated on the disclosure statement as required in subdivision 7 of this section.~~
- ~~6. The owner or operator of the facility has submitted to the director a certification from the local governing body (city, county, or town in which the facility is to be located) stating, without qualifications, conditions, or reservations, that the location and operation of the facility are consistent with all applicable ordinances.~~
- ~~7. The owner or operator of the facility has submitted to the director appropriate Key Personnel Disclosure Statements.~~
- ~~8. The facility will be operated by an individual certified by the Board of Waste Management Facility Operators.~~

**~~9VAC20-120-190. Financial assurance requirements. (Repealed.)~~**

~~Article 2-~~

~~Financial Assurance~~

~~The department has adopted and will maintain a separate regulation, the Financial Assurance Regulations for Solid Waste Facilities, which shall be applicable in all parts to regulated medical waste management facilities. Nothing in this chapter governing regulated medical waste management shall be considered to delete or alter any requirements of the department as set out in Financial Assurance Regulations for Solid Waste Facilities.~~

**~~9VAC20-120-200. Responsibility for packaging and labeling. (Repealed.)~~**

~~Article 3-~~

~~Packaging and Labeling Requirements for Regulated Medical Waste~~

~~A. The generator of regulated medical waste is responsible for the packaging and labeling of regulated medical wastes. As a bag or container becomes full, it must be sealed, labeled and managed as described in this chapter. Contractors or other agents may provide services to the generator, including packaging and labeling of regulated medical waste, however, no contract or other relationship shall relieve the generator of the responsibility for packaging and labeling the regulated medical waste as required by this chapter.~~

~~B. No person shall receive for transportation, storage or treatment any regulated medical waste that is not packaged and labeled in accordance with this chapter. Contractors or other agents may package or repackage regulated medical wastes to comply with this chapter, if the packaging or repackaging is performed on-site where the regulated medical waste was generated and no transportation, storage, treatment or disposal occurs prior to the packaging or repackaging. Nothing in this section shall prevent the proper repackaging and further transportation of regulated medical waste that has spilled during transportation.~~

**~~9VAC20-120-210. Packaging prior to storage, treatment or transport. (Repealed.)~~**

~~All regulated medical waste shall be packaged as follows:~~

- ~~1. When regulated medical wastes are discarded, they shall be placed in containers meeting the requirements of the standards for occupational exposure to bloodborne pathogens in the general industry standard in 16VAC25-90-1910.1030. The general industry standard requires the packaging to be closable, constructed to prevent leakage, labeled with the biohazard symbol, and closed to prevent spillage during handling. Upon being placed in storage, red bags shall be used for the packaging of all regulated medical waste except as provided in subdivision 2 of this section.~~

Packaging shall be labeled as provided for in ~~9VAC20-120-220~~.

~~2. Contaminated sharps shall be placed directly in containers as required by the general industry standards in 16VAC25-90-1910.1030. The containers shall be labeled as provided for in 9VAC20-120-220.~~

~~3. As bags and containers become full, they shall be sealed such that no waste materials can leak.~~

~~4. Prior to transporting regulated medical waste, waste will be packaged for transportation in accordance with the standards of 49 CFR Part 173 or packaged in accordance with an exemption approved by the United States Department of Transportation.~~

**~~9VAC20-120-220. Labeling requirements. (Repealed.)~~**

~~Waste packaged under subdivisions 1 or 2 of 9VAC20-120-210 shall be labeled. The label shall be securely attached to or printed on packaging. The label may be a tag securely affixed to the package. Indelible ink shall be used to complete the information on the label. The label and the information provided on the label must be clearly legible. The following information shall be included:~~

- ~~1. The name, address and business telephone number of the generator.~~
- ~~2. "Regulated Medical Waste" in large print.~~
- ~~3. The Biological Hazard Symbol.~~

**~~9VAC20-120-230. Etiological agents. (Repealed.)~~**

~~All etiological agents, as defined in 49 CFR Parts 171 through 178, that are transported must be packaged and labeled as described in 49 CFR Parts 171 through 178.~~

**~~9VAC20-120-240. Sharps. (Repealed.)~~**

~~Sharps must be placed directly into puncture resistant containers as required by the general industry standards in 16VAC25-90-1910.1030(d)(4)(iii)(A).~~

**~~9VAC20-120-250. Protection of packagers. (Repealed.)~~**

~~Persons packaging regulated medical waste shall wear appropriate items of personal protective equipment.~~

**~~9VAC20-120-260. Special requirements for reusable containers. (Repealed.)~~**

~~Regulated medical waste may be conveyed in reusable carts or containers under the following conditions:~~

- ~~1. The waste in the cart or container is packaged and labeled fully in accordance with 9VAC20-120-210 through 9VAC20-120-240.~~
- ~~2. Immediately following each time a reusable cart or container is emptied and prior to being reused it is thoroughly cleaned with detergent or general purpose disinfectant.~~
- ~~3. When reusable carts or containers containing regulated medical waste are used for off-site transport, all aspects of the cart or container management shall comply with federal Department of Transportation Hazardous Material Regulations 49 CFR Parts 171 to 178, as applicable.~~

**~~9VAC20-120-270. Spill containment and cleanup kit. (Repealed.)~~**

~~Article 4-~~

~~Management of Spills of Regulated Medical Waste~~

~~All regulated medical waste management facilities are required to keep a spill containment and cleanup kit within the vicinity of any area where regulated medical wastes are managed, and the location of the kit shall provide for rapid and efficient cleanup of spills anywhere within the area. All vehicles transporting regulated medical wastes are required to carry a spill containment and clean up kit in the vehicle whenever regulated medical wastes are conveyed. The kit shall consist of at least the following items:~~

- ~~1. Material designed to absorb spilled liquids. The amount of absorbent material shall be that having a capacity, as rated by the manufacturer, of one gallon of liquid for every cubic foot of regulated medical waste that is normally managed in the area for which the kit is provided or 10 gallons, whichever is less.~~
- ~~2. One gallon of disinfectant in a sprayer capable of dispersing its charge in a mist and in a stream at a distance. The disinfectant shall be hospital grade and effective against mycobacteria.~~
- ~~3. Enough red plastic bags to enclose 150% of the maximum load accumulated or transported (up to a maximum of 500 bags), that meet the applicable requirements of 49 CFR Part 173 or an exemption approved by the United States Department of Transportation. These bags shall be large enough to overpack any box or other container normally used for regulated medical waste management by that facility.~~
- ~~4. Appropriate personal protective equipment.~~

~~5. For vehicles only, a first aid kit, fire extinguisher, boundary marking tape, lights and other appropriate safety equipment.~~

**~~9VAC20-120-280. Containment and cleanup procedures. (Repealed.)~~**

~~Following a spill of regulated medical waste or its discovery, the following procedures shall be implemented:~~

- ~~1. Take appropriate precautions to ensure personnel do not come into contact with any contaminants by wearing appropriate personal protective equipment.~~
- ~~2. Repackage spilled waste in accordance with the packaging requirements in 9VAC20-120-210.~~
- ~~3. Transport any regulated medical waste by a transporter that meets the requirements of Part VI (9VAC20-120-400 et seq.) of this chapter.~~
- ~~4. Clean and disinfect any areas having been contacted by regulated medical wastes. Materials used to decontaminate the area will be disinfectants effective against mycobacteria.~~
- ~~5. Take necessary steps to replenish containment and cleanup kit.~~

**~~9VAC20-120-290. Closure requirements. (Repealed.)~~**

~~Article 5-~~

~~Closure Requirements~~

~~When a unit that has been used for regulated medical waste management is to cease operations involving regulated medical wastes, it shall be thoroughly cleaned and disinfected. All regulated medical waste shall be disposed of in accord with this chapter, and items of equipment shall be decontaminated.~~

**~~9VAC20-120-300. Methods of treatment and disposal. (Repealed.)~~**

~~Article 6-~~

~~Treatment and Disposal~~

~~A. All regulated medical waste must be incinerated, sterilized by steam, or treated by a method as described in Part VII (9VAC20-120-520 et seq.), VIII (9VAC20-120-580 et seq.), or IX (9VAC20-120-630 et seq.) of this chapter.~~

~~B. No regulated medical waste shall be disposed of in a solid waste landfill or other solid waste management facility. Upon authorized treatment and management in accord with this chapter, the solid waste or its ash is not regulated medical waste and may be disposed of at any landfill or other solid waste management facility permitted to receive municipal solid waste or garbage, provided the disposal is in accordance with the Solid Waste Management Regulations, 9VAC20-81, and other applicable regulations and standards.~~

~~C. Regulated medical waste in closed bags or containers shall not be compacted or subjected to violent mechanical stress; however, after it is fully treated and it is no longer regulated medical waste, it may be compacted in a closed container. Nothing in this section shall prevent the puncturing of containers or packaging immediately prior to permitted treatment in which grinding, shredding, or puncturing is integral to the process units; however, all grinding, shredding and puncturing shall be done with safe and sanitary methods. Nothing in this section shall prevent the use of devices that grind, shred or compact to reduce volume at the point of generation. Devices will be constructed in a manner that prevents employee exposure to the waste, contains any aerosol or mist that may be caused by the process, and treats or filters any air evacuated from the chamber during processing. These devices may be employed at the point of generation and prior to enclosing the regulated medical waste in plastic bags and other required packaging; however, the waste remains regulated medical waste. Appropriate means must be employed to appropriately protect workers and contain the waste when unloading regulated medical wastes from such a device.~~

**~~9VAC20-120-310. Recordkeeping requirements. (Repealed.)~~**

~~Article 7-~~

~~Recordkeeping~~

~~A. Unless a generator is exempt from this requirement under the provisions of 9VAC20-120-170 C, generators and regulated medical waste management facilities that manage regulated medical waste shall maintain the following records and assure that they are accurate and current:~~

- ~~1. A list of the members of any committee for the management of infection control for the facility, their address, their phone numbers and the period of their membership.~~
- ~~2. The date, persons involved and short description of events in each spill of more than 32 gallons of regulated medical waste or one quart of regulated medical waste consisting of free liquid.~~
- ~~3. A notebook or file containing the adopted policies and procedures of the facility for dealing with regulated medical wastes.~~

~~4. A log of all special training received by persons involved in regulated medical waste management.~~

~~5. A log of regulated medical waste received from off site, the generator, the amount and its storage and receipt dates. Records shall be maintained for a period of three years and be available for review.~~

~~B. All regulated medical waste management facilities shall maintain the following records and assure that they are accurate and current:~~

~~1. A signed certificate for each load received in which the generator affirms that the load does not contain hazardous waste (including cytotoxic medications) or radioactive materials, except as provided in 9VAC20-120-320; or~~

~~2. A signed and effective contract, inclusive of all loads received from a generator, in which the generator affirms that all loads will not contain hazardous waste (including cytotoxic medications) or radioactive materials, except as provided in 9VAC20-120-320.~~

**9VAC20-120-320. Management of radioactive materials. (Repealed.)**

~~Article 8-~~

~~Radioactive Materials~~

~~The United States Nuclear Regulatory Commission (USNRC) has established regulations under Title 10 of the Code of Federal Regulations for the management of radioactive materials. The Virginia Department of Health has established other requirements in accordance with Title 32.1 of the Code of Virginia. No regulated medical waste containing radioactive materials, regardless of amount or origin, shall be treated unless its management and treatment are in full compliance with these two bodies of regulations and are deemed by both regulations not to represent a threat to public health and the environment.~~

**9VAC20-120-330. Application. (Repealed.)**

~~Part V-~~

~~Special Requirements for Storage Facilities~~

~~The requirements of this part apply only to areas of storage where more than 200 gallons of regulated medical waste are accumulated, including storage of regulated medical waste during transportation and at incinerator, steam sterilization and other treatment and disposal facilities. This part applies to areas used to transfer a load of regulated medical waste from one vehicle to another during transportation, or park a vehicle containing regulated medical waste during transportation for 24 hours or more. This part also applies to areas that are exempt from permitting requirements as specified in 9VAC20-120-170 B, which includes designated on-site storage areas. Regulated medical waste holding areas exempt from the requirements of this part are discussed in 9VAC20-120-170 A and C.~~

**9VAC20-120-340. Sanitation. (Repealed.)**

~~All areas used to store regulated medical waste must be clean and impermeable to liquids. Carpets and floor coverings with cracks or gaps shall not be used in storage area. Where tile floors are used and seams are present in the tile, the floor must be sealed with wax or other floor coatings in order to meet this requirement. Vectors shall be controlled.~~

**9VAC20-120-350. Access. (Repealed.)**

~~All areas used to store regulated medical waste must have access control that limits access to those persons specifically designated to manage regulated medical waste.~~

**9VAC20-120-360. Temperature control and storage period. (Repealed.)**

~~Any regulated medical waste stored for more than seven days must be refrigerated, stored in an ambient temperature between 35° and 45°F (2° and 7°C). If the material is stored away from the site of generation and the time in storage is unknown, the regulated medical waste must be refrigerated. No regulated medical waste shall be stored for more than 15 days at the site of generation. Procedures shall be provided to ensure that the above storage timeframes are met. The date that the waste is first placed in storage will be provided on any outer packaging while the waste is in storage.~~

**9VAC20-120-370. Drainage and ventilation. (Repealed.)**

~~All floor drains shall discharge directly to an approved sanitary sewer system. All ventilation shall discharge so as to minimize human exposure to the effluent. Storage, transport and transfer to, from, and between vehicles shall be under a cover or packaged in a container that protects the waste from the elements and over a floor or bermed pavement that will contain leaks and spills of liquid from the waste. No requirement for cover, floor, or pavement shall be construed if the activity is transient in nature, such as in the case of spill cleanup or weekly collection of waste packages from professional offices for transport.~~

**~~9VAC20-120-380. Facilities for management of reusable carts or containers. (Repealed.)~~**

~~Waste managed in reusable carts or containers shall meet the special requirements for reusable containers in 9VAC20-120-260.~~

**~~9VAC20-120-390. Container management. (Repealed.)~~**

~~Persons loading, unloading, or handling containers of regulated medical waste shall wear appropriate personal protective equipment.~~

**~~9VAC20-120-400. Application. (Repealed.)~~****Part VI-****Special Requirements for Transportation**

The requirements of this part apply to all transportation of regulated medical waste.

**~~9VAC20-120-410. Sanitation. (Repealed.)~~**

~~Surfaces of equipment used to transport regulated medical waste must be clean and impermeable to liquids, if those areas are involved with the management of the waste. Carpets and floor coverings with cracks or gaps shall not be used. Vectors shall be controlled. All trucks and equipment used to transport regulated medical waste must be thoroughly cleaned with detergent or hospital grade disinfectant before being used for any other purpose and prior to any transfer of ownership. Any areas of trucks or equipment that are visibly contaminated, or that become contaminated as a result of a spill, will be immediately decontaminated in accordance with 9VAC20-120-280 A 4.~~

**~~9VAC20-120-420. Access. (Repealed.)~~**

~~All vehicles and equipment used in the transportation of regulated medical waste must have access control that limits access to those persons specifically designated to manage regulated medical waste.~~

**~~9VAC20-120-430. Temperature control and storage period. (Repealed.)~~**

~~Any regulated medical waste that is stored for more than seven days must be refrigerated and maintained in an ambient temperature between 35° and 45°F (2° and 5°C). Any vehicle parked 24 hours or more during transport will be considered a storage facility subject to the requirements of Part V (9VAC20-120-330 et seq.) of this chapter. No storage during transport will be allowed without a permit issued in accordance with the procedures in Part X (9VAC20-120-680 et seq.) of this chapter.~~

**~~9VAC20-120-440. Drainage. (Repealed.)~~**

~~Storage, transport and transfer to, from, and between vehicles shall be under a cover or in a container that protects the waste from the elements and over a floor or bermed pavement that will contain leaks and spills of liquid from the waste. All drainage shall discharge directly to or through a holding tank to an approved sanitary sewer system. No requirement for cover, floor, or pavement shall be construed if the activity is transient in nature, such as in the case of spill cleanup or weekly collection of waste packages from professional offices for transport.~~

**~~9VAC20-120-450. Packaging and labeling. (Repealed.)~~**

~~No person shall transport or receive for transport any regulated medical waste that is not packaged and labeled in accord with Part IV (9VAC20-120-160 et seq.) of this chapter.~~

**~~9VAC20-120-460. Management of spills of regulated medical waste. (Repealed.)~~**

~~A. All vehicles transporting regulated medical wastes are required to carry a spill containment and cleanup kit in the vehicle as specified in 9VAC20-120-270, whenever regulated medical wastes are conveyed.~~

~~B. Following a spill of regulated medical waste or its discovery, the procedures specified in 9VAC20-120-280 shall be implemented.~~

**~~9VAC20-120-470. Loading and unloading. (Repealed.)~~**

~~Persons loading and unloading transportation vehicles with regulated medical waste shall wear appropriate personal protective equipment.~~

**~~9VAC20-120-490. Transport by mail. (Repealed.)~~**

~~Transport of regulated medical waste by the United States Postal Services that fully complies with 39 CFR 111 shall be considered to be transportation in compliance with this chapter if:~~

- ~~1. The generator maintains a complete and legible copy of the manifest or mail disposal service shipping record for a period of three years (Note: disposer's certification and other tracking items must be completed and shown on the copy);~~
- ~~2. The addressee is a facility permitted by all the appropriate agencies of the Commonwealth of Virginia or the host state; and~~

~~3. No package may be more than 35 pounds by weight.~~

**~~9VAC20-120-500. Transport using reusable carts or containers. (Repealed.)~~**

~~A. No reusable carts or containers that have been used to manage regulated medical waste may be transported unless they meet the provisions of 9VAC20-120-260 which requires cleaning of the cart.~~

~~B. Reusable carts or containers used to transport regulated medical waste must be sealed, highly puncture resistant, and highly leak resistant. They shall conform in all respects to 49 CFR Parts 172 through 178 for containers and transport of "regulated medical waste."~~

**~~9VAC20-120-510. (Reserved). (Repealed.)~~**

**~~9VAC20-120-520. Application. (Repealed.)~~**

~~Part VII-~~

~~Special Requirements for Incineration~~

~~The requirements of this part apply to all facilities that incinerate regulated medical waste.~~

**~~9VAC20-120-530. Performance standards. (Repealed.)~~**

~~A. All incinerators for regulated medical waste shall maintain the following level of operational performance at all times:~~

~~1. Operational temperature and retention time. Whenever regulated medical wastes are incinerated, all the regulated medical waste shall be subjected to a burn temperature of not less than 1,400°F (760°C) for a period not less than one hour. For all incinerators, gases generated by the combustion shall be subjected to a temperature of not less than 1,800°F (982°C) for a period of one second or more. For certain incinerators, gases generated by the combustion shall be subjected to a temperature of not less than 2,000°F (1,094°C) for a period of two seconds or more under separate requirements of the State Air Pollution Control Board. Except at start-up, interlocks or other process control devices shall prevent feeding of the incinerator unless the required conditions are achieved.~~

~~2. Loading and operating controls. The incinerator shall have interlocks or other process control devices to prevent feeding of the incinerator until the conditions in subdivision A 1 of this section are achieved. Such devices may have an override for cold start-up. In the event low temperatures occur, facilities shall have automatic auxiliary burners that are capable of maintaining the secondary chamber temperature at the minimum of 1,800°F.~~

~~3. Monitoring. There shall be continuous monitoring and recording of primary and secondary chamber temperatures. Monitoring data shall be retained for a period of three years.~~

~~4. Waste destruction efficiency. All combustible regulated medical waste shall be converted by the incineration process into ash that is not recognizable as to its former character.~~

~~B. The incinerator shall be permitted under regulations of the State Air Pollution Control Board and be in compliance with the regulations of that body.~~

**~~9VAC20-120-540. Analysis and management of the ash product; procedure; results and records; disposition of ash; ash storage. (Repealed.)~~**

~~A. Once every eight hours of operation of a continuously fed incinerator and once every batch or 24 hours of operation of a batch fed incinerator, a representative sample of 250 milliliters of the bottom ash shall be collected from the ash discharge or the ash discharge conveyer. Samples collected during 1,000 hours of operation or quarterly, whichever is more often, shall be thoroughly mixed and seven random portions of equal volume shall be composited into one sample for laboratory analysis. This sample shall be tested in accord with the methods established by the Virginia Hazardous Waste Management Regulations for determining if a solid waste is a hazardous waste. Also, the sample shall be tested for total organic carbon content.~~

~~At incinerators equipped with air pollution control devices that remove and collect incinerator emissions control ash or dust, this ash shall be held separately and not mixed with bottom ash. Once every eight hours of operation of a continuously fed incinerator and once every batch or 24 hours of operation of a batch fed incinerator, a representative sample of 250 milliliters of the air pollution control ash or dust shall be collected from the pollution control ash discharge. Air pollution control ash or dust samples collected during 1,000 hours of operation or quarterly, whichever is more often, shall be thoroughly mixed and seven random portions of equal volume shall be composited into one sample for laboratory analysis. This sample shall be tested in accord with the methods established by the Virginia Hazardous Waste Management Regulations for determining if a waste is a hazardous waste.~~

~~B. A log shall document the ash sampling, to include the date and time of each sample collected; the date, time and identification number of each composite sample; and the results of the analyses, including laboratory identification. Results of analyses must be returned from the laboratory and recorded within four weeks following collection of the composite sample. The results and records described in this part shall be~~

maintained for a period of three years, and shall be available for review.

~~C. If a waste ash is found to be hazardous waste (based on a sample and a confirmation sample) the waste ash shall be disposed of as a hazardous waste in accord with the Virginia Hazardous Waste Management Regulations. If ash is found not to be hazardous waste by analysis, it may be disposed of in a solid waste landfill that is permitted to receive garbage, municipal solid waste or incinerator ash, provided the disposal is in accordance with the Solid Waste Management Regulations, 9VAC20-81. If the ash is found to be hazardous waste, the operator shall notify the Director of the Department of Environmental Quality within 24 hours. No later than 15 calendar days following, the permittee shall submit a plan for treating and disposing of the waste on hand at the facility and all unsatisfactorily treated waste that has left the facility. The permittee may include with the plan a description of the corrective actions to be taken to prevent further unsatisfactory performance. No ash subsequently generated from the incinerator waste stream that was found to be hazardous waste shall be sent to a nonhazardous solid waste management facility in the Commonwealth without the express written approval of the director.~~

~~D. Air pollution control ash and bottom ash shall be held separately and not mixed; however, once both are determined not to be hazardous waste, they may be combined and disposed of as other solid waste. Throughout the storage of the untested material it shall be kept in covered highly leak resistant containers. It should be held until the generator determines whether the ash waste is hazardous waste. Areas where untested material containers are placed must be constructed with a berm to prevent runoff from that area.~~

~~E. Regulated medical waste treated in compliance with Part VII (9VAC20-120-520 et seq.), VIII (9VAC20-120-580 et seq.) or IX (9VAC20-120-630 et seq.) of this chapter shall be deemed to be treated in accordance with this chapter. Regulated medical waste not treated in accordance with this chapter shall not be transported, received for transport or disposal, or disposed of in any solid waste management facility.~~

**9VAC20-120-550. Compliance with other parts of this chapter. (Repealed.)**

~~In general, incinerator facilities shall comply with all other parts of this chapter. The site of the incinerator facility is a storage facility and must comply with Part V of this chapter. Management of spills or the opening in an emergency of any regulated medical waste package, shall comply with 9VAC20-120-270 and 9VAC20-120-280. Regulated medical wastes that are or will be incinerated in accordance with this chapter are not required to be shredded or ground.~~

**9VAC20-120-560. Unloading operations. (Repealed.)**

~~Persons loading and unloading transportation vehicles with regulated medical waste shall wear appropriate personal protective equipment.~~

**9VAC20-120-570. (Reserved). (Repealed.)**

**9VAC20-120-580. Application. (Repealed.)**

~~Part VIII~~

~~Special Requirements for Steam Sterilization~~

~~The requirements of this part apply to all steam sterilizers (autoclaves) that sterilize regulated medical waste.~~

**9VAC20-120-590. Performance standards. (Repealed.)**

~~All sterilizers for regulated medical waste shall maintain the following level of operational performance at all times:~~

- ~~1. Operational temperature and detention. Whenever regulated medical wastes are treated in a steam sterilizer, all the regulated medical waste shall be subjected to the following operational standards (at 100% steam conditions and all air evacuated):~~
  - ~~a. Temperature of not less than 250°F for 90 minutes at 15 pounds per square inch of gauge pressure;~~
  - ~~b. Temperatures of not less than 272°F for 45 minutes at 27 pounds per square inch of gauge pressure; or~~
  - ~~c. Temperatures of not less than 320°F for 16 minutes at 80 pounds per square inch of gauge pressure.~~

~~Equivalent combinations of operational temperatures, pressure and time may be approved by the director if the installed equipment has been proved to achieve a reliable and complete kill of all microorganisms in regulated medical waste at design capacity. Written requests for approval of an equivalent standard shall be submitted to the director. Complete and thorough testing shall be fully documented, including tests of the capacity to kill *B. stearothermophilus*. Longer steam sterilization times are required when a load contains a large quantity of liquid.~~

~~2. Operational controls and records.~~

- ~~a. Steam sterilization units shall be evaluated under full loading for effectiveness with spores of~~

~~B. stearothermophilus no less than once per month.~~

~~b. A log shall be kept at each steam sterilization unit that is complete for the preceding three-year period. The log shall record the date, time and operator of each usage; the type and approximate amount of regulated medical waste treated; the dates and results of calibration; and the results of effective testing described in subdivision 2 a of this section. Where multiple steam sterilization units are used, a working log can be maintained at each unit and such logs periodically consolidated at a central location. The consolidated logs shall be retained for three years and be available for review.~~

~~c. Except as described in subdivision 2 d of this section, regulated medical waste shall not be compacted or subjected to violent mechanical stress before steam sterilization; however, after it is fully sterilized it may be compacted in a closed container.~~

~~d. Except as provided in 9VAC20-120-550, 9VAC20-120-600 E or 9VAC20-120-650 D, regulated medical waste shall be ground or shredded into particles that are no larger than an approximate size of 0.75 inches in any dimension. If size reduction takes place prior to treatment, it shall occur in a closed unit immediately preceding the treatment unit. Size reduction following treatment must occur within 24 hours of leaving the treatment unit. Transfer from a grinder or shredder to or from a treatment unit shall be under forced draft ventilation that removes fumes from the operations area to a safe discharge.~~

~~e. All process units for the preparation or treatment of regulated medical waste shall be in closed vessels under a negative pressure atmospheric control that filters all vents, discharges, and fugitive emissions of air from the process units through a high efficiency particulate air (HEPA) filter with an efficiency of 99.97% of 0.3 microns. Air and gases which have themselves been sterilized by the process are not required to pass through a filter.~~

#### **9VAC20-120-600. Disposal of treated wastes. (Repealed.)**

~~A. Solid waste that has been steam sterilized and managed in compliance with these regulations is no longer regulated medical waste and is solid waste. Steam sterilized solid waste may be compacted.~~

~~B. All shredded or ground solid waste that has been steam sterilized shall be placed in opaque plastic bags and sealed. The bags may not be red in color. Where bulk sterilization is used and the solid waste is compacted or immediately placed in closed bulk solid waste management containers, which are more than 64 gallons in volume, the repackaging of the solid waste in bags is not required.~~

~~C. Regulated medical waste that has been treated must also be ground or shredded in accordance with 9VAC20-120-590 2 or packaged and labeled in accordance with subsection E of this section.~~

~~D. Regulated medical waste treated in compliance with Part VII, Part VIII or Part IX shall be deemed to be treated in accordance with this chapter. Regulated medical waste not treated in accordance with this chapter shall not be transported, received for transport or disposal, or disposed of in any solid waste management facility.~~

~~E. Steam sterilization facilities in operation on July 1, 1994, and small scale processes providing treatment in accordance with this part of no more than 100 pounds of regulated medical waste per day (monthly average) are not required to shred or grind the waste. Facilities that do not grind or shred the waste must seal the treated waste in an orange plastic bag and securely attach a tag or label with the following message in indelible ink and legible print of a 21-point or greater typeface:~~

~~"The generator certifies that this waste has been treated in accordance with the Virginia Regulated Medical Waste Management Regulations and is no longer regulated medical waste.~~

~~Treated: (include date treatment performed)~~

~~Generator: (include name, address and telephone number of generator)."~~

#### **9VAC20-120-610. Compliance with other parts of this chapter. (Repealed.)**

~~In general, sterilizer facilities shall comply with all other parts of this chapter. The site of the sterilizer facility is a storage facility and must comply with Part V of this chapter. Management of spills or the opening in an emergency of any regulated medical waste package, shall comply with 9VAC20-120-270 and 9VAC20-120-280.~~

#### **9VAC20-120-620. (Reserved). (Repealed.)**

#### **9VAC20-120-630. Application. (Repealed.)**

### ~~Part IX-~~

#### ~~Special Requirements for Alternative Treatment~~

~~The requirements of this part apply to all alternative treatment methods that treat regulated medical waste.~~

**9VAC20-120-640. Performance standards. (Repealed.)**

All alternative treatment facilities for regulated medical waste shall maintain the following level of operational performance at all times:

1. Operational controls and records. The following requirements apply to all alternative treatment facilities:

a. Except as provided in 9VAC20-120-550, 9VAC20-120-600 E or 9VAC20-120-650 D, regulated medical waste shall be ground or shredded into particles that are no larger than an approximate size of 0.75 inches in any dimension. If size reduction takes place prior to treatment, it shall occur in a closed unit immediately preceding or following the treatment unit. Size reduction following treatment must occur within 24 hours of leaving the treatment unit. Transfer from a grinder or shredder to or from a treatment unit shall be under forced draft ventilation that removes fumes from the operations area to a safe discharge.

b. Alternative treatment units shall be evaluated under full loading for effectiveness with spores of *B. stearothermophilus* or *B. subtilis* no less than once per month (See 9VAC20-120-910 B).

c. A log shall be kept at each alternative treatment unit that is complete for the preceding three year period. The log shall record the date, time and operator; the type and approximate amount of solid waste treated; and the dates and results of calibration and testing. Where multiple alternative treatment units are used, a working log can be maintained at each unit and such logs periodically consolidated at a central location. The consolidated logs and all performance parameter recordings shall be retained for three years and be available for review.

d. Except as described in 9VAC20-120-300 C and subdivision 1 a of this section, regulated medical waste shall not be compacted or subjected to violent mechanical stress before treatment. After it is fully treated it may be compacted in a closed container in a safe and sanitary manner.

e. All process units for the preparation or treatment of regulated medical waste shall be in closed vessels under a negative pressure atmospheric control that filters all vents, discharges, and fugitive emissions of air from the process units through a high efficiency particulate air (HEPA) filter with efficiency of 99.97% for 0.3 microns.

2. Special requirements by type of treatment. Facilities shall comply with the following treatment requirements for the specific technology employed. Each treatment unit shall be preceded by grinding or shredding in accordance with subdivision 1 a of this section:

a. Dry heat treatment.

(1) Any treatment unit employing dry heat as the main treatment process shall subject all the regulated medical waste to:

(a) A temperature of no less than 480°F for no less than 30 minutes;

(b) A temperature of no less than 390°F for no less than 38 minutes; or

(c) A temperature of no less than 355°F for no less than 60 minutes.

(2) No treatment unit employing dry heat as the main treatment process shall have a treatment chamber capacity greater than 1.0 cubic feet in volume.

(3) Each treatment unit shall be equipped to sense, display and continuously record the temperature of the treatment chamber.

b. Microwave treatment.

(1) Microwaving treatment shall incorporate pretreatment by shredding and steam injection or induction.

(2) Any treatment unit employing microwave radiation as the main treatment process shall subject all the solid waste to a temperature of no less than 203°F for no less than 25 minutes.

(3) Microwave radiation power of the treatment process shall be at least six units each having a power of 1,200 watts or the equivalent power output.

(4) Each microwave treatment unit shall be equipped to sense, display and continuously record the temperature at the start, middle and end of the treatment chamber.

(5) Process temperatures at the exposure chamber entry and exit and the waste flow rate shall be continuously monitored, displayed, and recorded.

c. Chlorination.

(1) Any treatment unit employing chlorination as the main treatment process shall subject all the solid waste to a solution whose initial free residual chlorine concentration is not less than 3,000 milligrams per liter for no less than 25 minutes.

(2) The free chlorine residual of the solid waste slurry after treatment shall be maintained at 200

~~milligrams per liter. The treated solid waste stream shall be equipped to continuously analyze, display, and record free chlorine residual concentration. Interval sampling every two minutes or less may be substituted for continuous analysis.~~

~~d. Other alternative treatment technologies. All alternative treatment technologies approved by the director shall conform to the requirements of this part and any additional requirements the director shall impose at the time of approval.~~

~~(1) Any person who desires to use a treatment technology other than those described in subdivisions 2 a, 2 b, and 2 c of this section, or Part VII (9VAC20-120-520 et seq.) or Part VIII (9VAC20-120-580 et seq.) of this chapter shall petition the director for a review under 9VAC20-120-860 and 9VAC20-120-870.~~

~~(2) If the director finds that the technology and application is in accord with Article 3 (9VAC20-120-900 et seq.) of Part XI of this chapter, he may consider the facility for permitting.~~

~~(3) The director may issue a public notice that an applicant has demonstrated compliance of a process with 9VAC20-120-910 through 9VAC20-120-950 and consider 9VAC20-120-960 in a separate review.~~

#### **9VAC20-120-650. Disposal of treated wastes. (Repealed.)**

~~A. Regulated medical waste that has been treated by an alternate treatment technique and managed in compliance with this chapter is no longer regulated medical waste and is solid waste. Treated solid waste may be compacted.~~

~~B. All regulated medical waste that has been treated shall be placed in opaque plastic bags and sealed. The bags may not be red in color. Where bulk treatment is used and the solid waste is compacted and immediately placed in closed bulk solid waste management containers, which are more than 64 gallons in volume, the repackaging of the treated solid waste in bags is not required.~~

~~C. Regulated medical waste treated in compliance with Part VII, Part VIII or Part IX shall be deemed to be treated in accordance with this chapter. Regulated medical waste not treated in accordance with this chapter shall not be transported, received for transport or disposal, or disposed of in any solid waste management facility.~~

~~D. Small scale processes providing treatment of no more than five pounds per day (monthly average) of regulated medical waste in accordance with this part are not required to shred or grind the waste. Small scale facilities that do not grind or shred the waste must seal the treated waste in an orange plastic bag and securely attach a tag or label with the following message in indelible ink and legible print of a 21-point or greater typeface:~~

~~"The generator certifies that this waste has been treated in accordance with the Virginia Regulated Medical Waste Management Regulations and is no longer regulated medical waste.~~

~~Treated: (include date treatment performed)~~

~~Generator: (include name, address and telephone number of generator)."~~

#### **9VAC20-120-660. Compliance with other parts of this chapter. (Repealed.)**

~~In general, alternative treatment facilities shall comply with all other parts of this chapter. The site of the treatment facility is a storage facility and must comply with Part V of this chapter. Management of spills or the opening in an emergency of any regulated medical waste package, shall comply with 9VAC20-120-270 and 9VAC20-120-280 of this chapter.~~

#### **9VAC20-120-670. (Reserved). (Repealed.)**

#### **9VAC20-120-680. Scope. (Repealed.)**

### ~~Part X~~

#### ~~Permit Application and Issuance Procedures~~

~~This part of the chapter describes procedures for obtaining a permit for the transfer, treatment or storage of regulated medical waste, unless specifically excluded by these regulations or under a permit by rule as defined in 9VAC20-120-160, 9VAC20-120-170, and 9VAC20-120-180. Owners and operators of regulated medical waste management units shall have permits during the active life (including the closure periods) of the unit. An applicant may be considered to have a permit or a permit may be terminated for one or more units at a facility without simultaneously affecting all of the units at the facility.~~

#### **9VAC20-120-690. Applicability; exemptions from permit requirements; off-site permits by rule; experimental facility permits; variances. (Repealed.)**

~~A. Except for on-site permit by rule facilities described in Part IV (9VAC20-120-160 et seq.) of this chapter, no person shall construct, operate or modify a regulated medical waste management facility in this Commonwealth without a permit issued by the director in accordance with this part. Notwithstanding the above, the management of materials excluded under Part III (9VAC20-120-80 et seq.) of this chapter or~~

conditionally exempt under Part III shall not require a permit.

~~B. Each regulated medical waste management facility permit shall be limited to one site and shall be nontransferable between sites.~~

~~C. A new permit is required when there is:~~

- ~~1. Any new regulated medical waste management facility; or~~
- ~~2. Any change in design or process of a regulated medical waste management facility that will, in the opinion of the director, result in a substantially different type of facility.~~

~~D. The owner or operator of the following facilities shall be deemed to have a regulated medical waste management facility permit notwithstanding any other provisions of Part X (9VAC20-120-680 et seq.) of this chapter, if all the conditions listed are met:~~

~~1. The owner or operator of a storage facility or transfer station:~~

- ~~a. Notifies the director of his intent to operate such a facility and provides to the department documentation required under 9VAC20-120-710 B;~~
- ~~b. Provides the director with a certification that the facility meets the standards of Part V (9VAC20-120-330 et seq.) of this chapter;~~
- ~~c. Furnishes to the director a certificate signed by a registered professional engineer that the facility has been designed and constructed in accordance with the standards of Part V;~~
- ~~d. Submits to the director an operational plan describing how the standards of Part V will be met and provides the operational information required in 9VAC20-120-730;~~
- ~~e. Submits to the director a closure plan describing how the standards of 9VAC20-120-290 will be met;~~
- ~~f. Submits to the director the proof of financial responsibility if required by the Financial Assurance Regulations for Solid Waste Facilities (9VAC20-70); and~~
- ~~g. Submits to the director the results of the public participation effort conducted in accordance with the requirements contained in 9VAC20-120-690 D 4.~~

~~2. The owner or operator of an incineration or other treatment facility:~~

- ~~a. Notifies the director of his intent to operate such a facility and provides to the department documentation required under 9VAC20-120-710 B;~~
- ~~b. Provides the director with a certification that the facility meets the standards of Part VII (9VAC20-120-520 et seq.), VIII (9VAC20-120-580 et seq.), or IX (9VAC20-120-630 et seq.) of this chapter;~~
- ~~c. Furnishes to the director a certificate signed by a registered professional engineer that the facility has been designed and constructed in accordance with the standards of Part VII, VIII, or IX of this chapter;~~
- ~~d. Submits to the director an operational plan describing how the standards of Part VII, VIII, or IX will be met, and provides the operational information required in 9VAC20-120-730;~~
- ~~e. Submits to the director a closure plan describing how the standards of 9VAC20-120-290 will be met;~~
- ~~f. Submits to the director the proof of financial responsibility if required by the Financial Assurance Regulations for Solid Waste Facilities (9VAC20-70); and~~
- ~~g. Furnishes to the director a copy of the facility permit issued for air pollution control of any regulated point source discharges at the facility.~~

~~3. Use of materials in a manner constituting disposal. (Reserved)~~

~~4. Public participation.~~

- ~~a. Before the initiation of any construction at the facility under 9VAC20-120-690 D 1 or 9VAC20-120-690 D 2, the owner or operator shall publish a notice in a major local newspaper of general circulation informing the public that he intends to construct and operate a facility eligible for an off-site permit by rule. The notice shall include:
 
  - ~~(1) A brief description of the proposed facility;~~
  - ~~(2) A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the facility and how the standards and the requirements of this chapter will be met;~~
  - ~~(3) Announcement of a 30-day comment period, in accordance with 9VAC20-120-690 D 4 d, and the name and address of the owner's or operator's representative where comments shall be sent;~~
  - ~~(4) Announcement of the date, time, and place for a public meeting held in accordance with~~~~

~~9VAC20-120-690 D 4 c; and~~

~~(5) Location where copies of the documentation to be submitted to the department in support of the off-site permit by rule notification and any supporting documents can be viewed and copied.~~

~~b. The owner or operator shall place a copy of the documentation and support documents in a location accessible to the public in the vicinity of the proposed facility.~~

~~c. The owner or operator shall hold a public meeting not earlier than 15 days after the publication of the notice required in 9VAC20-120-690 D 4 a and no later than seven days before the close of the 30-day comment period. The meeting shall be held to the extent practicable in the vicinity of the proposed facility.~~

~~d. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period will begin on the date the owner or operator publishes the notice in the local newspaper.~~

~~5. Upon receiving the certifications and other required documents and after conducting a completeness review, the director will acknowledge their receipt and inform the owner or operator of the status of the submittal. If the applicant's submission is administratively incomplete, the letter will state that the facility will not be considered to have an off-site permit by rule until the missing certifications or other required documentation is submitted. At the time of the initial receipt or at a later date, the director may require changes in the documents designed to assure compliance with the standards of Parts V, VI, VII, VIII and IX of this chapter, if applicable. Should such changes not be accomplished by the facility owner or operator, the facility will not be deemed to have a regulated medical waste management facility permit.~~

~~6. An off-site permit by rule may not be transferred by the permittee to a new owner or operator. However, when the property transfer takes place without proper closure, the new owner shall notify the department of the sale and fulfill all the requirements contained in 9VAC20-120-690 D 1 through 9VAC20-120-690 D 3 with the exception of those dealing with the financial assurance. Upon presentation of the financial assurance proof required by 9VAC20-70-10 et seq. by the new owner, the department will release the old owner from his closure and financial responsibilities and acknowledge existence of the new off-site permit by rule in the name of the new owner.~~

~~7. The owner or operator of a facility operating under an off-site permit by rule may modify its design and operation by furnishing the department a new certificate prepared by the professional engineer and a new operational plan. Whenever modifications in the design or operation of the facility affect the provisions of the approved closure plan, the owner or operator shall also submit an amended closure plan. Should there be an increase in the closure costs, the owner or operator shall submit a new proof of financial responsibility as required by the Financial Assurance Regulations for Solid Waste Facilities (9VAC20-70).~~

~~8. In the event that a facility operating under an off-site permit by rule violates any applicable siting, design and construction, or closure provisions of Part V, VII, VIII, or IX of this chapter, the owner or operator of the facility will be considered to be operating an unpermitted facility and shall be required to close under 9VAC20-120-290, 9VAC20-120-710 and 9VAC20-120-750.~~

~~9. The director shall terminate off-site permit by rule and shall require closure of the facility whenever he finds that:~~

~~a. As a result of changes in key personnel, the requirements necessary for an off-site permit by rule are no longer satisfied;~~

~~b. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in his disclosure statement, or any other report or certification required under this chapter, or has knowingly or willfully failed to notify the director of any material change to the information in the disclosure statement;~~

~~c. Any key personnel has been convicted of any of the crimes listed in § 10.1-1409 of the Code of Virginia, punishable as felonies under the laws of the Commonwealth or the equivalent of them under the laws of any other jurisdiction; or has been adjudged by an administrative agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth or any other state and the director determines that such conviction or adjudication is sufficiently probative of the permittee's inability or unwillingness to operate the facility in a lawful manner; or~~

~~d. The operation of the facility is inconsistent with the facility's operations manual and the operational requirements of the regulations.~~

~~E. The director may issue an experimental facility permit for any regulated medical waste treatment facility that proposes to utilize an innovative and experimental regulated medical waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under Part VII, VIII or IX of this chapter. Any such permit shall include such terms and conditions as will~~

assure protection of human health and the environment. Such permits shall:

- ~~1. Provide for the construction of such facilities based on the standards shown in Part V, VII, VIII, or IX, as necessary;~~
- ~~2. Provide for operation of the facility for no longer than one calendar year unless renewed as provided elsewhere in this chapter;~~
- ~~3. Provide for the receipt and treatment by the facility of only those types and quantities of regulated medical waste that the director deems necessary for purposes of determining the efficiency and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment; and~~
- ~~4. Include such requirements as the director deems necessary to protect human health and the environment (including, but not limited to, requirements regarding monitoring, operation, closure and remedial action), and such requirements as the director deems necessary regarding testing and providing of information to the director with respect to the operation of the facility.~~

~~For the purpose of expediting review and issuance of permits under this subsection, the director may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements in Parts V, VII, VIII or IX, except that there may be no modification or waiver of regulations regarding local certification, disclosure statement requirements, financial responsibility or of procedures regarding public participation.~~

~~No experimental permit may be renewed more than three times. Each such renewal shall be for a period of not more than one calendar year.~~

~~F. The director may grant a variance in accordance with the procedures in Part XI (9VAC20-120-840 et seq.) of this chapter from any regulation contained in this part to a permittee, provided the requirements of Part X are met.~~

#### **9VAC20-120-700. Permit conditions. (Repealed.)**

~~The director may include conditions in any permit that he finds necessary to protect public health or the environment or to ensure compliance with this chapter.~~

#### **9VAC20-120-710. Notice of intent. (Repealed.)**

~~A. Any person who proposes to establish a new regulated medical waste management facility, or modify an existing regulated medical waste management facility, shall submit a permit application to the department, using the procedures set forth in 9VAC20-120-690 and other pertinent sections of this part.~~

~~B. To initiate the permit application process, any person who proposes to establish a new regulated medical waste management facility ("regulated medical waste management"), or modify an existing regulated medical waste management facility, or to amend an existing permit shall file a notice of intent with the director stating the desired permit or permit amendment, the precise location of the proposed facility, and the intended use of the facility. The notice shall be in letter form and be accompanied by the information described in 9VAC20-120-720.~~

~~No application shall be deemed complete unless it is accompanied by a disclosure statement for all key personnel as provided by DEQ Forms DISC-01 and DISC-02.~~

~~No application for a permit for a regulated medical waste management facility shall be considered complete unless the notice of intent is accompanied by a certification (DEQ Form Certificate 01) from the governing body of the county, city, or town in which the facility is to be located stating that the location and operation of the facility are consistent with all applicable ordinances. No certification shall be required for the application for an amendment or modification of an existing permit. For the convenience of the regulated community, a Request for Local Government Certification, DEQ Form CERT-01, is provided.~~

~~If the location and operation of the facility is stated by the local governing body to be consistent with all its ordinances, without qualifications, conditions, or reservations, the applicant will be notified that he may submit his application for a permit.~~

#### **9VAC20-120-720. Submission requirements. (Repealed.)**

~~A. The information provided in this section shall be included in the submission of a notice of intent as required in 9VAC20-120-710 unless otherwise specified in this section.~~

~~B. A letter will be provided stating the type of facility for which the permit application is made and the certification required in subsection F of this section and all pertinent information and attachments required by this section.~~

~~C. A key map delineating the general location of the proposed facility shall be prepared and attached as part of the application. The key map shall be plotted on a seven and one-half minute United States Geological Survey topographical quadrangle. The quadrangle shall be the most recent revision available, shall include the name of the quadrangle and shall delineate a minimum of one mile from the perimeter of the proposed facility boundaries. One or more maps may be utilized where necessary to insure clarity of~~

the information submitted.

~~D. A near vicinity map shall be prepared and attached as part of the application. The vicinity map shall have a minimum scale of one inch equals 200 feet (1 inch = 200'). The vicinity map shall delineate an area of 500 feet from the perimeter of the property line of the proposed facility. The vicinity maps may be an enlargement of a United States Geological Survey topographical quadrangle or a recent aerial photograph. The vicinity map shall depict the following:~~

- ~~1. All homes, buildings or structures including the layout of the buildings that will comprise the proposed facility;~~
- ~~2. The boundaries of the proposed facility;~~
- ~~3. The limits of the actual waste management areas within the boundaries of the proposed facility, if applicable;~~
- ~~4. Lots and blocks taken from the tax map for the site of the proposed facility and all contiguous properties;~~
- ~~5. The base flood plain, where it passes through the map area; or, otherwise, a note indicating the expected flood occurrence period for the area;~~
- ~~6. Existing land uses and zoning classification;~~
- ~~7. All water supply wells, springs or intakes, both public and private;~~
- ~~8. All utility lines, pipelines or land based facilities (including mines and wells); and~~
- ~~9. All parks, recreation areas, dams, historic areas, wetlands areas, monument areas, cemeteries, wildlife refuges, unique natural areas or similar features.~~

~~E. A copy of the lease or deed (showing page and book location) or certification of ownership of the site. The department will not consider an application for a permit from any person who does not demonstrate legal control over the site for the period of the permit life.~~

~~F. A statement signed by the applicant indicating that he has sent written notice to all adjacent property owners or occupants that he intends to develop a regulated medical waste management facility on the site. A copy of the notice and the names and addresses of those to whom the notices were sent will also be provided.~~

#### **9VAC20-120-730. Operational information. (Repealed.)**

~~A. A narrative will be provided outlining the details of the design/operational capacities of the facility, emergency contingency information and daily operation of the facility as follows:~~

- ~~1. The narrative shall identify the project title; engineering consultants; site owner, licensee and operator; site life and capacity; municipalities, industries and collection and transportation agencies served; and waste types to be disposed. It shall also identify any exemptions desired by the applicant.~~
- ~~2. The narrative shall include the following information:
 
  - ~~a. The rated capacity of the facility, in both tons per day and tons per hour;~~
  - ~~b. The expected short-term and projected future long-term daily loadings;~~
  - ~~c. The designation of normal loading, unloading and storage areas, including capacities in cubic yards and tons. Description of the time such areas can be practically used, based on expected short-term daily loadings;~~
  - ~~d. The designation of emergency loading, unloading, storage or other actions to be taken when facility system down time exceeds 24 hours;~~
  - ~~e. The designation of alternate treatment areas or plans for transfer of stored waste in the event facility system down time exceeds 72 hours.~~~~
- ~~3. The narrative will discuss the generation of process residues to include the following:
 
  - ~~a. The expected daily quantity of waste residue generated;~~
  - ~~b. The proposed ultimate disposal location for all facility-generated waste residues including, but not limited to, treated waste, ash residues and by pass material, residues resulting from air pollution control devices, and the proposed alternate treatment or disposal locations for any unauthorized waste types, which may have been unknowingly accepted. The schedule for securing contracts for the treatment or disposal of these waste types at the designated locations shall be provided;~~
  - ~~c. A descriptive statement of any materials use, reuse, or reclamation activities to be operated in conjunction with the facility, either on the incoming regulated medical waste or the outgoing residue.~~~~
- ~~4. A discussion of the proposed onsite and off-site transportation system intended to service~~

~~vehicles hauling waste to the facility for processing, and vehicles removing reclaimed materials and or process residues from the facility. Onsite parking, access and exit points, and the mechanisms or features that will be employed to provide for an even flow of traffic into, out of, and within the site, shall be identified.~~

~~5. A detailed analysis shall be made of the financial responsibility for the time of site closing.~~

~~B. The operations manual shall provide the detailed procedures describing actions taken by facility personnel from the time of waste delivery, through waste storage, processing and final transportation and disposal. As a minimum, the operations manual shall include:~~

~~1. Daily operations including a discussion of the timetable for development; waste types accepted or excluded; typical waste handling techniques; hours of operation; traffic routing; drainage and erosion control; windy, wet and cold weather operations; fire protection equipment; manpower; methods for handling of any unusual waste types; methods for vector, dust and odor control; daily cleanup; salvaging; record keeping; parking for visitors and employees; monitoring; backup equipment with names and telephone numbers where equipment may be obtained; and other special design features. This information may be developed as a removable section to improve accessibility for the site operator.~~

~~2. The procedures that will be used to label individual waste containers, bulk containers or trailers with the date that the waste materials were received from off-site, and the procedures that will be used to demonstrate that the waste is treated within 15 days of receipt.~~

~~3. Site closing information consisting of a discussion of the anticipated sequence of events for site closing and discussion of those actions necessary to prepare the site for any anticipated post-closure use.~~

~~C. An emergency contingency plan that delineates procedures for responding to fire, explosions or any unplanned sudden or non-sudden releases of harmful constituents to the air, soil, or surface or ground water shall be submitted to the department as part of the Part B application. Before submission to the department it will be coordinated with the local police and fire departments, and the appropriate health care facility. The contingency plan shall contain:~~

~~1. A description of the actions facility personnel shall take in the event of various emergency situations;~~

~~2. A description of arrangements made with the local police and fire department that allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of response personnel responding to an emergency situation; and~~

~~3. A list of names, addresses and phone numbers (office and home) of all persons qualified to act as an emergency coordinator for the facility. Where more than one person is listed, one shall be named as primary emergency coordinator and the other shall be listed in the order in which they will assume responsibility as alternates.~~

~~D. The applicant shall prepare and submit a detailed plan for closing any regulated medical waste management unit. Such a plan shall be prepared to reflect the actions required at any point in the life of the facility and at the time of closing the facility. The plan should reflect all steps necessary to isolate the facility from the environment or to remove all regulated medical waste and residue in the facility for proper treatment and to decontaminate the facility. The closure plan should reflect all actions necessary for facility abandonment or uses other than for regulated medical waste management.~~

#### **9VAC20-120-740. Effect of the permit. (Repealed.)**

~~A. Each facility permitted to accept regulated medical waste requires periodic inspection and review of records and reports. Such requirements shall be set forth in the final permit issued by the department. The permit applicant, by accepting the permit, agrees to the specified periodic inspections.~~

~~B. Compliance with a valid permit and this chapter during its term constitutes compliance for purposes of enforcement, with the Virginia Waste Management Act. However, a permit may be modified, considered invalid, or terminated for cause as set forth in 9VAC20-120-690 D 7, D 8, and D 9.~~

~~C. A permit does not convey any property rights of any sort, or any exclusive privilege.~~

~~D. A permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, Commonwealth or local law or regulations.~~

~~E. A permit may be transferred in accordance with the procedures in 9VAC20-120-690 D 6.~~

~~F. The permit may, consistent with 9VAC20-120-700, specify a schedule of compliance leading to compliance with this chapter.~~

~~1. Any schedules of compliance under this subsection or subsection G of this section shall require compliance as soon as possible.~~

~~2. Except as otherwise provided, if a permit establishes a schedule of compliance that exceeds one~~

~~year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.~~

~~a. The time between interim dates shall not exceed one year;~~

~~b. If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages of completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.~~

~~3. The permit shall be written to require that no later than 14 calendar days following each interim date and the final date of compliance, a permittee shall notify the director, in writing, of his compliance or noncompliance with the interim or final requirements.~~

~~G. A permit applicant or permittee may cease conducting regulated activities (by receiving a terminal volume of regulated medical waste, and, in case of treatment or storage facilities, closing pursuant to applicable requirements, or, in case of disposal facilities, closing and conducting post-closure care pursuant to applicable requirements) rather than continue to operate and meet permit requirements as follows:~~

~~1. If the permittee decides to cease conducting regulated activities at a specified time for a permit that has already been issued:~~

~~a. The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or~~

~~b. The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.~~

~~2. If the decision to cease conducting regulated activities is made before the issuance of a permit whose terms will include the termination date, the permit shall contain a schedule leading to termination that will ensure timely compliance with applicable requirements.~~

~~3. If the permittee is undecided whether to cease conducting regulated activities, the director may issue or amend a permit to continue two schedules as follows:~~

~~a. Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date that ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;~~

~~b. One schedule shall lead to timely compliance with applicable requirements;~~

~~c. The second schedule shall lead to cessation of regulated activities by a date that will ensure timely compliance with applicable requirements.~~

~~d. Each permit containing two schedules shall include a requirement that, after the permittee has made a final decision, he shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.~~

~~4. The applicant's decisions to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the director, such as a resolution of the board of directors of a corporation.~~

#### **9VAC20-120-750. Closure care. (Repealed.)**

~~A. An owner, operator or permittee intending to close a regulated medical waste management facility shall notify the department of the intention to do so as least 180 calendar days prior to the anticipated date of closing.~~

~~B. Closure shall occur in accord with an approved closure plan, which shall be submitted with the permit application documents and approved when the director acknowledges that the facility is considered to have a permit. The holder of the permit shall submit a proposed modified closure plan to the department for review and approval as such modifications become necessary during the life of the facility.~~

~~C. The department shall inspect all regulated medical waste management facilities that have been closed to determine if the closing is complete and adequate. It shall notify the owner of a closed facility, in writing, if the closure is satisfactory, and shall order necessary construction or such other steps as may be necessary to bring unsatisfactory sites into compliance with this chapter. Notification by the department that the closure is satisfactory does not relieve the operator of responsibility for corrective action to prevent or abate problems caused by the facility.~~

#### **9VAC20-120-760. Recording and reporting required of a permittee. (Repealed.)**

~~A. A permit may specify:~~

~~1. Required monitoring, including type, intervals and frequency, sufficient to yield data that are representative of the monitored activity;~~

2. Requirements concerning the proper use, maintenance, and installation of monitoring equipment or methods, including biological monitoring methods when appropriate; and
3. Applicable reporting requirements based upon the impact of the regulated activity and as specified in this chapter.

B. A permittee shall be subject to the following whenever monitoring is required by the permit:

1. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation for at least three years from the sample or measurement date. The director may request that this period be extended.
2. Records of monitoring information shall include:
  - a. The date, exact place and time of sampling or measurements;
  - b. The individuals who performed the sampling or measurements;
  - c. The dates analyses were performed;
  - d. The individuals who performed the analyses;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.
3. Monitoring results shall be maintained on file for inspection by the department.

C. A permittee shall be subject to the following reporting requirements:

1. Written notice of any planned physical alterations to the permitted facility, unless such items were included in the plans and specifications or operating plan approved by the department, shall be given to the director and approved before such alterations are to occur.
2. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit, shall be submitted no later than 14 calendar days following each schedule date.
3. The permittee shall report to the department any noncompliance or unusual condition that may endanger health or environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five calendar days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue. It shall also contain steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.

D. Copies of all reports required by the permit, and records of all data used to complete the permit application must be retained by the permittee for at least three years from the date of the report or application. The director may request that this period be extended.

E. When the permittee becomes aware that he failed to submit any relevant facts or submitted incorrect information in a permit application or in any report to the director, he shall promptly submit such omitted facts or the correct information with an explanation.

#### **9VAC20-120-810. Amendment of permits. (Repealed.)**

A. Temporary authorizations:

1. Upon request of the permittee, the director may, without prior public notice and comment, grant the permittee a temporary authorization in accordance with the requirements of this section. Temporary authorizations shall have a term of not more than 180 calendar days.
2. a. The permittee may request a temporary authorization for:
  - (1) Any substantive amendment meeting the criteria in subdivision 3 b (1) of this subsection; and
  - (2) Any major amendment that meets the criteria in subdivision 3 b (1) or (2) of this subsection; or that meets the criteria in subdivisions 3 b (3) and (4) of this subsection and provides improved management or treatment of a regulated medical waste already listed in the facility permit.
- b. The temporary authorization request shall include:
  - (1) A description of the activities to be conducted under the temporary authorization;
  - (2) An explanation of why the temporary authorization is necessary; and
  - (3) Sufficient information to ensure compliance with standards in Part V (9VAC20-120-330 et seq.) or VI (9VAC20-120-400 et seq.) of this chapter.
- c. The permittee shall send a notice about the temporary authorization request to all persons on the facility mailing list. This notification shall be made within seven calendar days of submission of the authorization request.

~~3. The director shall approve or deny the temporary authorization as quickly as is practical. To issue a temporary authorization, the director shall find:~~

~~a. The authorized activities are in compliance with the standards of Part V (9VAC20-120-330 et seq.), VII (9VAC20-120-520 et seq.), VIII (9VAC20-120-580 et seq.) or IX (9VAC20-120-630 et seq.) of this chapter.~~

~~b. The temporary authorization is necessary to achieve one of the following objectives before action is likely to be taken on an amendment request:~~

~~(1) To facilitate timely implementation of closure or corrective action activities;~~

~~(2) To prevent disruption of ongoing waste management activities;~~

~~(3) To enable the permittee to respond to sudden changes in the types or quantities of the wastes managed under the facility permit; or~~

~~(4) To facilitate other changes to protect human health and the environment.~~

~~4. A temporary authorization may be reissued for one additional term of up to 180 calendar days provided that the permittee has requested a substantive or a major permit amendment for the activity covered in the temporary authorization, and (i) the reissued temporary authorization constitutes the director's decision on a substantive permit amendment in accordance with the Solid Waste Management Regulations (9VAC20-81) or (ii) the director determines that the reissued temporary authorization involving a major permit amendment request is warranted to allow the authorized activities to continue while the amendment procedures of the Solid Waste Management Regulations (9VAC20-81) are conducted.~~

~~B. Newly defined or identified wastes. The permittee is authorized to continue to manage wastes defined or identified as regulated medical waste under Part III (9VAC20-120-80 et seq.) of this chapter if he:~~

~~1. Was in existence as a regulated medical waste management facility with respect to the newly defined or identified regulated medical waste on the effective date of the final rule defining or identifying the waste; and~~

~~2. (i) Is in compliance with the standards of Part V, VII, VIII or IX, as applicable, with respect to the new waste, submits a minor modification request on or before the date on which the waste becomes subject to the new requirements or (ii) is not in compliance with the standards of Part V or VI, as applicable, with respect to the new waste, but submits a complete permit amendment request within 180 calendar days after the effective date of the definition or identifying the waste.~~

~~C. The suitability of the facility location will not be considered at the time of permit amendment unless new information or standards indicate that an endangerment to human health or the environment exists that was unknown at the time of permit issuance.~~

#### **9VAC20-120-820. Duration of permits. (Repealed.)**

~~Any permit for the management of regulated medical waste shall expire after 10 years of operation. Permits shall not be extended beyond the 10-year permit by permit transfer or modifications. At any time more than 180 calendar days prior to the expiration of the permit and no more than 480 calendar days prior to the expiration of the permit, the holder of a valid permit may request that the director renew the permit and submit all information known to permit holder that is changed or new since the original permit application and that has not been previously submitted to the director. A permit may be renewed for a period of 10 years of operation. Processing of the request will be in accordance with the following:~~

~~1. If the holder of a valid permit for a regulated medical waste management facility files with the director a request to renew the permit at least 180 calendar days prior to the expiration of that permit, the director will cause an audit to be conducted of the facility's past operation, its current condition and the records held by the department concerning the facility. Within 60 calendar days of receipt of a proper request, the director will report to the applicant the findings of the audit and those items of correction or information required before renewal will be considered. The director shall review the environmental compliance history of the permittee, material changes in key personnel, and technical limitations, standards, or regulations on which the original permit was based. If the director finds repeated material or substantial violations of the permittee or material changes in the permittee's key personnel would make continued operation of the facility not in the best interest of human health or the environment, the director shall deny the request for renewal of the permit. If the director finds the facilities to be insufficient to comply with regulations in effect at the time of the proposed renewal, the director shall deny the request for renewal. The director shall request any information from the permittee that is necessary to conduct the audit, and that is reasonably available to the permittee and substantive to the proposed renewal.~~

~~2. If the applicant files for renewal less than 180 calendar days prior to the expiration of the original permit or files an improper application the director shall deny the application for renewal. If an application for renewal has been denied for a facility, any further applications and submittals shall~~

be identical to those for a new facility.

**9VAC20-120-830. Existing facilities qualifications. (Repealed.)**

Owners and operators of existing and permitted infectious waste management facilities are not required to submit an application for a new permit at the time these amended regulations become effective. Existing permits will remain valid, except that conditions or waivers in existing permits that conflict with these amended regulations are void on the date six months from the effective date of these amended regulations. Operators of existing facilities are required to comply with these amended regulations within six months following their effective date and may comply at any time with any item contained in this chapter in lieu of a conflicting condition contained in an existing permit.

**9VAC20-120-840. General. (Repealed.)**

~~Part XI  
Variances and Other Procedures  
Article 1  
Petition for Variance~~

Any person directly affected by this chapter may petition the director to grant a variance from any requirement of this chapter, subject to the provisions of this part. Any petition submitted to the director is also subject to the provisions of the Virginia Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

The director will not accept any petition relating to:

1. Equivalent testing or analytical methods contained in EPA Publication SW-846;
2. Definitions of regulated medical waste contained in Part III (9VAC20-120-80 et seq.) of this chapter; and
3. A change in the regulatory requirements that the petitioner is currently violating until such time as the violation has been resolved through the enforcement process.

**9VAC20-120-850. Application and conditions. (Repealed.)**

~~Article 2  
Variances to Requirements~~

The director may grant a variance from any regulation contained in Parts IV through X to a petitioner if the petitioner demonstrates to the satisfaction of the director that:

1. a. Strict application of the regulation to the facility will result in undue hardship that is caused by the petitioner's particular situation; or
  - b. Technical conditions exist that make a strict application of the regulation difficult to achieve; and
  - c. The alternate design or operation will result in a facility that is equally protective of the human health and the environment as that provided for in the regulations; and
2. Granting the variance will not result in an unreasonable risk to the public health or the environment.

**9VAC20-120-860. Effects of the decisions. (Repealed.)**

A. When the director renders a decision under this section in accordance with the procedures contained here, he may:

1. Deny the petition;
2. Grant the variance as requested; or
3. Grant a modified or partial variance.

B. When a modified variance is granted, the director may:

1. Specify the termination date of the variance;
2. Include a schedule for:
  - a. Compliance, including increments of progress, by the facility with each requirement of the variance; and
  - b. Implementation by the facility of such control measures as the director finds necessary in order that the variance may be granted.

**9VAC20-120-870. Submission of petition. (Repealed.)**

A. All petitions submitted to the director shall include:

1. The petitioner's name and address;

- ~~2. A statement of petitioner's interest in the proposed action;~~
- ~~3. A description of desired action and a citation to the regulation from which a variance is requested;~~
- ~~4. A description of need and justification for the proposed action;~~
- ~~5. The duration of the variance, if applicable;~~
- ~~6. The potential impact of the variance on public health or the environment;~~
- ~~7. Other information believed by the petitioner to be pertinent; and~~
- ~~8. The following statements signed by the petitioner or his authorized representative:~~

~~"I certify that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."~~

~~B. In addition to the general information required of all petitioners under this article:~~

- ~~1. To be successful the petitioner shall address the applicable standards and criteria.~~
- ~~2. The petitioner shall provide an explanation of the petitioner's particular situation that prevents the facility from achieving compliance with the cited regulation.~~
- ~~3. The petitioner shall provide other information as may be required by the department.~~

### **9VAC20-120-880. Petition processing. (Repealed.)**

~~A. After receiving a petition that includes the information required in 9VAC20-120-870, the director will determine whether the information received is sufficient to render the decision. If the information is deemed to be insufficient, the director will specify additional information needed and request that it be furnished.~~

~~B. The petitioner may submit the additional information requested, or may attempt to show that no reasonable basis exists for the request for additional information. If the director agrees that no reasonable basis exists for the request for additional information, he will act in accordance with subsection C of this section. If the director continues to believe that a reasonable basis exists to require the submission of such information, he will proceed with the denial action in accordance with the Virginia Administrative Process Act (VAPA).~~

~~C. After the petition is deemed complete:~~

- ~~1. The director will make a tentative decision to grant or deny the petition.~~
- ~~2. In case that petition may be tentatively denied, the director will offer the petitioner the opportunity to withdraw the petition, submit additional information, or request the director to proceed with the evaluation.~~
- ~~3. Unless the petition is withdrawn, the director will issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by newspaper advertisement in the locality where the petitioner is located. The director will accept comment on the tentative decision for 30 calendar days.~~
- ~~4. Upon a written request of any interested person, the director may, at his discretion, hold an informal fact finding meeting described in § 2.2-4011 of the Virginia Administrative Process Act. A person requesting a meeting shall state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The director may in any case decide on his own motion to hold such a meeting.~~
- ~~5. After evaluating all public comments the director will, within 15 calendar days after the expiration of the comment period:
 
  - ~~a. Notify the petitioner of the final decision; and~~
  - ~~b. Notify all persons who commented on the tentative decision or publish it in a newspaper having circulation in the locality.~~~~

### **9VAC20-120-890. Petition resolution. (Repealed.)**

~~A. In the case of a denial, the petitioner has a right to request a formal hearing to challenge the rejection.~~

~~B. If the director grants a variance request, the notice to the petitioner shall provide that the variance may be terminated upon a finding by the director that the petitioner has failed to comply with any variance requirements.~~

### **9VAC20-120-900. General. (Repealed.)**

~~Article 3  
Innovative Treatment Technology Review~~

~~The requirements for alternate treatment methods contained in Part IX allow, at subdivision 2 d of 9VAC20-120-640, that new or innovative treatment technologies can be approved for permitting if the director reviews the process and determines that it provides treatment in keeping with this chapter and protects public health and the environment, and if the director establishes appropriate conditions for their siting, design, and operation. This article establishes the criteria, protocols, procedures, and processes to be used to petition the director for review and to demonstrate the suitability of the proposed process for the treatment of regulated medical waste.~~

**9VAC20-120-910. Criteria for microbial inactivation. (Repealed.)**

~~A. Inactivation is required to be demonstrated of vegetative bacteria, fungi, all viruses, parasites, and mycobacteria at a 6 Log<sub>10</sub> reduction or greater; a 6 Log<sub>10</sub> reduction is defined as a 6 decade reduction or a one millionth (0.000001) survival probability in a microbial population (i.e., a 99.9999% reduction).~~

~~B. Inactivation is required to be demonstrated of *B. stearothermophilus* spores or *B. subtilis* spores at a 4 Log<sub>10</sub> reduction or greater; a 4 Log<sub>10</sub> reduction is defined as a 4 decade reduction or a 0.0001 survival probability in a microbial population (i.e., a 99.99% reduction).~~

**9VAC20-120-920. Representative of biological indicators. (Repealed.)**

~~A. One or more representative microorganisms from each microbial group shall be used in treatment efficacy evaluation.~~

~~1. Vegetative Bacteria:~~

- ~~-Staphylococcus aureus (ATCC 6538)~~
- ~~-Pseudomonas aeruginosa (ATCC 15442)~~

~~2. Fungi:~~

- ~~-Candida albicans (ATCC 18804)~~
- ~~-Penicillium chrysogenum (ATCC 24791)~~
- ~~-Aspergillus niger~~

~~3. Viruses:~~

- ~~-Polio 2 or Polio 3~~
- ~~-MS-2 Bacteriophage (ATCC 15597-B1)~~

~~4. Parasites:~~

- ~~-Cryptosporidium spp. oocysts~~
- ~~-Giardia spp. cysts~~

~~5. Mycobacteria:~~

- ~~-Mycobacterium terrae~~
- ~~-Mycobacterium phlei~~
- ~~-Mycobacterium bovis (BCG) (ATCC 35743)~~

~~B. Spores from one of the following bacterial species shall be used for efficacy evaluation of chemical, thermal, and irradiation treatment systems.~~

- ~~1. *B. stearothermophilus* (ATCC 7953)~~
- ~~2. *B. subtilis* (ATCC 19659)~~

**9VAC20-120-930. Quantification of microbial inactivation. (Repealed.)**

~~A. Microbial inactivation ("kill") efficacy is equated to "Log<sub>10</sub> Kill," which is defined as the difference between the logarithms of number of viable test microorganisms before and after treatment. This definition is equated as:~~

~~Log<sub>10</sub> Kill = Log<sub>10</sub> I(cfu/g) - Log<sub>10</sub> R(cfu/g) where:~~

~~Log<sub>10</sub> Kill is equivalent to the term Log<sub>10</sub> reduction.~~

~~"I" is the number of viable test microorganisms introduced into the treatment unit.~~

~~"R" is the number of viable test microorganisms recovered after treatment.~~

~~"cfu/g" are colony forming units per gram of waste solids.~~

~~B. For those treatment processes that can maintain the integrity of the biological indicator carrier (i.e., ampules, plastic strips) of the desired microbiological test strain, biological indicators of the required strain and concentration can be used to demonstrate treatment efficacy. Quantification is evaluated by growth or no growth of the cultured biological indicator.~~

C. For those treatment mechanisms that cannot ensure or provide integrity of the biological indicator (i.e., chemical inactivation/grinding), quantitative measurement of treatment efficacy requires a two-step approach: Step 1, "Control"; Step 2, "Test." The purpose of Step 1 is to account for the reduction of test microorganisms due to loss by dilution or physical entrapment.

1. Step 1.

- a. Use microbial cultures of a predetermined concentration necessary to ensure a sufficient microbial recovery at the end of this step.
- b. Add suspension to a standardized medical waste load that is to be processed under normal operating conditions without the addition of the microbial inactivation agent (i.e., heat, chemicals).
- c. Collect and wash waste samples after processing to recover the biological indicator organisms in the sample.
- d. Plate recovered microorganism suspensions to quantify microbial recovery. (The number of viable microorganisms recovered serves as a baseline quantity for comparison to the number of recovered microorganisms from wastes processed with the microbial inactivation agent).
- e. The required number of recovered viable indicator microorganisms from Step 1 must be equal to or greater than the number of microorganisms required to demonstrate the prescribed Log reduction as specified in 9VAC20-120-910 (i.e., a 6  $\text{Log}_{10}$  reduction for vegetative microorganisms or a 4  $\text{Log}_{10}$  reduction for bacterial spores). This can be defined by the following equation:

$$\text{Log}_{10}\text{RC} = \text{Log}_{10}\text{IC} \%68 \text{Log}_{10}\text{NR}$$

where:  $\text{Log}_{10}\text{RC}$  is greater than or equal to 6 for vegetative microorganisms and is greater than or equal to 4 for bacterial spores and where:

$\text{Log}_{10}\text{RC}$  is the number of viable "Control" microorganisms (in colony forming units per gram of waste solids) recovered in the nontreated processed waste residue.

$\text{Log}_{10}\text{IC}$  is the number of viable "Control" microorganisms (in colony forming units per gram of waste solids) introduced into the treatment unit.

$\text{Log}_{10}\text{NR}$  is the number of "Control" microorganisms (in colony forming units per gram of waste solids) that were not recovered after processing.  $\text{Log}_{10}\text{NR}$  represents an accountability fad-or for microbial loss.

2. Step 2.

- a. Use microbial cultures of the same concentration as in Step 1.
- b. Add suspension to the standardized medical waste load that is to be processed under normal operating conditions with the addition of the microbial inactivation agent.
- c. Collect and wash waste samples after processing to recover the biological indicator organisms in the sample.
- d. Plate recovered microorganism suspensions to quantify microbial recovery.
- e. From data collected from Step 1 and Step 2, the level of microbial inactivation (i.e., "Log<sub>10</sub> Kill") is calculated by employing the following equation:

$$\text{Log}_{10}\text{Kill} = \text{Log}_{10}\text{IT} \%68 \text{Log}_{10}\text{NR} \%68 \text{Log}_{10}\text{RT}, \text{ where:}$$

$\text{Log}_{10}\text{Kill}$  is equivalent to the term  $\text{Log}_{10}$  reduction.

$\text{Log}_{10}\text{IT}$  is the number of viable "Test" microorganisms (in colony forming units per gram of waste solids) introduced into the treatment unit.  $\text{Log}_{10}\text{IT} = \text{Log}_{10}\text{IC}$ .

$\text{Log}_{10}\text{NR}$  is the number of "Control" microorganisms (in colony forming units per gram of waste solids) that were not recovered after processing.

$\text{Log}_{10}\text{RT}$  is the number of viable "Test" microorganisms (in colony forming units per gram of waste solids) recovered in treated processed waste residue.

**9VAC20-120-940. Efficacy testing protocols. (Repealed.)**

A. Methodology employed to determine treatment efficacy of the technology will need to assure required microbial inactivation and assure the protocols are congruent with the treatment method. Protocols developed for efficacy testing shall incorporate, as applicable, recognized standard procedures such as those found in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods and Standard Methods for the Examination of Water and Waste Water.

B. The department shall prescribe those types and compositions of medical wastes that present the most challenge to treatment effectiveness under normal operating conditions of the equipment reviewed.

C. Dependent on the treatment process and treatment efficacy mechanisms utilized, protocols

evaluating medical waste treatment systems shall specifically delineate or incorporate, as applicable:

1. Waste compositions that typify actual waste to be processed;
2. Waste types that provide a challenge to the treatment process;
3. Comparable conditions to actual use (i.e., process time, temperature, chemical concentration, pH, humidity, load density, load volume);
4. Assurances that biological indicators (i.e., ampules, strips) are not artificially affected by the treatment process;
5. Assurances of inoculum traceability, purity, viability and concentration;
6. Dilution and neutralization methods that do not affect microorganism viability;
7. Microorganism recovery methodologies that are statistically correct (i.e., sample collection, number of samples/test, number of colony forming units/plate); and
8. Appropriate microbial culturing methods (i.e., avoidance of microbial competition, the selection of proper growth media and incubation times).

**9VAC20-120-950. Technology approval process. (Repealed.)**

A. To initiate the technology review process the petitioner shall complete and submit the "Petition For Evaluation and Approval of Regulated Medical Waste Treatment Technology Part A: General Information" to the department. The petitioner shall:

1. Provide a detailed description of the medical waste treatment equipment to be tested including manufacturer's instructions and equipment specifications, operating procedures and conditions including, as applicable, treatment times, pressure, temperatures, chemical concentrations, irradiation doses, feed rates, and waste load composition;
2. Provide documentation demonstrating the treatment method meets microbial inactivation criteria and required testing protocols including a detailed description of the test procedures and calculations used in fulfilling required performance standards verifying treatment efficacy, of user verification methodology, and of microbial culturing protocols that ensure traceability, purity and concentration;
3. Provide information on available parametric controls, verifying treatment efficacy and ensuring operator non-interference;
4. Provide documentation of applicable emission controls for suspected emissions;
5. Provide information relating to waste residues including their potential hazards/toxicities and their specific mode of disposal or recycling;
6. Provide documentation providing occupational safety and health assurance; and
7. Provide information on energy efficiency and other potential benefits the treatment technology has to offer to the environment.

B. The petitioner shall demonstrate that all required surrogate pathogens and resistant bacterial endospores are inactivated to criteria specified in 9VAC20-120-910 and 9VAC20-120-930 under the representative challenge waste load compositions.

C. The petitioner shall develop and demonstrate that site approval and user verification testing protocols are workable and valid.

D. The petitioner shall demonstrate where technically practical, the treatment efficacy relationship between biological indicator data and data procured from real-time parametric treatment monitoring equipment.

E. The petitioner shall demonstrate evidence of U.S. EPA pesticide registration for those treatment processes that employ a chemical agent to inactivate microorganisms.

F. Upon completion of items contained in 9VAC20-120-910 through 9VAC20-120-950, the technology approval that results is granted only under the conditions specified in the manufacturer's instructions and equipment specifications, operating procedures and conditions including, as applicable, treatment times, temperatures, pressure, chemical concentrations, irradiation doses, feed rates, and waste load composition. Any significant revisions to these equipment and operating conditions, as warranted relevant to the department, will require reapplication for approval to the department.

**9VAC20-120-960. Site approval process. (Repealed.)**

A. To fulfill treatment efficacy and information requirements for site approval, the equipment user shall:

1. Demonstrate that the equipment cited is the same equipment and process approved by the department as specified in 9VAC20-120-950.
2. Demonstrate that required resistant bacterial endospores are inactivated as specified in 9VAC20-120-910-B criteria under typical waste load and department specified challenge compositions;

3. Verify that user verification protocols adequately demonstrate treatment effectiveness; and
4. Verify the treatment efficacy relationship between biological indicator data and data procured from real-time parametric treatment monitoring equipment.

B. The site facility shall provide a written operations plan that includes:

1. The names or positions of the equipment operators;
2. The waste types or categories to be treated;
3. Waste segregation procedures required;
4. Wastes types prohibited for treatment;
5. Equipment operation parameters;
6. Treatment efficacy monitoring procedures;
7. Personal protective equipment requirements;
8. Emergency response plans; and
9. Operator training requirements.

C. The site facility shall submit to the department for their review:

1. Equipment model number and serial number;
2. Equipment specification and operations manual;
3. A copy of the facility's written plan; and
4. Certification documentation of operator training.

D. As a condition of site approval, the department shall have a right to inspect the facility and the right to revoke site approval if health and safety violations are discovered, if permit conditions are not being fulfilled, or if the facility is not adhering to its written plan.

E. Any modifications to the medical waste treatment unit may require re-approval by the director and may involve further efficacy testing.

**9VAC20-120-970. User verification. (Repealed.)**

A. To verify that the medical waste treatment unit is functioning properly and that performance standards are achieved, the petitioner shall:

1. Demonstrate that required resistant bacterial endospores are inactivated to criteria as specified in 9VAC20-120-910 B under standard operating procedures using protocols that have previously been approved by the department as specified under 9VAC20-120-950 and 9VAC20-120-960;
2. Establish a frequency of biological monitoring; and
3. Document and record all biological indicator and parametric monitoring data.

B. To document treatment efficacy for steam sterilizers and autoclaves, the equipment operator shall:

1. Adopt standard written operating procedures that denote:
  - a. Sterilization cycle time, temperature, pressure
  - b. Types of waste acceptable
  - c. Types of containers and closures acceptable
  - d. Loading patterns or quantity limitations;
2. Document times/temperatures for each complete sterilization cycle;
3. Use time-temperature sensitive indicators to visually denote the waste has been decontaminated;
4. Use biological indicators placed in the waste load (or simulated load) periodically to verify conditions meet microbial inactivation requirements as specified in 9VAC20-120-910 B; and
5. Maintain all records of procedure documentation, time-temperature profiles, and biological indicator results.

**9VAC20-120-980. Small medical waste treatment devices. (Repealed.)**

A. All small medical waste treatment devices shall fulfill the requirements necessary for technology approval and shall meet the treatment efficacy requirements as defined in 9VAC20-120-910.

B. Technology and siting approval are the responsibility of the petitioner. The petitioner shall provide to the department:

1. All information required for technology approval as defined in 9VAC20-120-950;
2. All information required of site approval for a typical site for which the equipment is designed as defined in 9VAC20-120-960; and
3. All materials and documents required of the user to ensure proper use, safety, and effective treatment. These materials and documents would include:

- a. ~~An operations and maintenance manual;~~
- b. ~~Information on proper use and potential misuse;~~
- c. ~~Treatment efficacy testing instructions;~~
- d. ~~Training/education manual; and~~
- e. ~~Available service agreements/programs.~~

C. ~~The manufacturer (vendor) shall furnish the user of the treatment device:~~

- 1. ~~An operations and maintenance manual;~~
- 2. ~~Information on proper use and potential misuse;~~
- 3. ~~Treatment efficacy testing instructions;~~
- 4. ~~Training/education manual; and~~
- 5. ~~Available service agreements/programs.~~

D. ~~Upon the installation of the treatment device, the manufacturer shall compile a record of the buyer, the location, and the results of onsite challenge testing at time of purchase. This information shall be submitted annually to the department by the petitioner as the notification record of site registrations of equipment installed that previous year.~~

#### **9VAC20-120-990. Waste residue disposal. (Repealed.)**

A. ~~Information on the characteristics of all waste residues (liquids and solids), and the mechanisms and models of their disposal shall be provided by the petitioner on the "Evaluation of Medical Waste Treatment Technology: Information Request Form." This information will include:~~

- 1. ~~Description of residues (i.e., liquid, solid, shredded, hazardous constituents);~~
- 2. ~~Waste designation (i.e. hazardous, special, general);~~
- 3. ~~Disposal mechanism (i.e. landfilling, incineration, recycling); and~~
- 4. ~~Recycling efforts, if anticipated, (i.e., waste types, amounts, percentages, name and location of recycling effort).~~

B. ~~Information on waste residue disposal shall be provided by the user facility as required under site approval (9VAC20-120-960). This information shall include:~~

- 1. ~~All information requested in 9VAC20-120-1000 A;~~
- 2. ~~The site of disposal (name and address);~~
- 3. ~~The mechanism of disposal (i.e. landfilling or incineration); and~~
- 4. ~~The amounts of residues anticipated to be disposed (e.g., volume and weight per week).~~

C. ~~If residues are to be recycled the following information shall be provided by the user facility as required under site approval (9VAC20-120-960). This information shall include:~~

- 1. ~~The types of waste residue to be recycled;~~
- 2. ~~The amounts of waste residue to be recycled;~~
- 3. ~~The percentage of the total waste and waste residue to be recycled;~~
- 4. ~~The recycling mechanism used; and~~
- 5. ~~The name and location of the recycler.~~

D. ~~Previously untreated medical wastes used in the development and testing of prototypical equipment shall be considered potentially infectious and will be required to be disposed as untreated medical waste.~~

E. ~~Prototypical equipment testing using non-infectious or previously treated medical waste (i.e., treated by an approved process such as steam sterilization) that has been inoculated with recommended surrogate pathogens can be disposed as general solid wastes after verification of treatment effectiveness.~~

F. ~~All liquid and solid waste residues will be disposed of in accordance with applicable state and local regulations.~~

#### **9VAC20-120-1000. Operator training. (Repealed.)**

A. ~~To assure proper operation of the treatment process, the manufacturer (vendor) shall provide to the user as part of the treatment equipment purchase an operator training program that will include:~~

- 1. ~~A description of all mechanical equipment, instrumentation, and power controls;~~
- 2. ~~A description of system's operations including waste types acceptable, loading parameters, process monitors, treatment conditions, and disposal;~~
- 3. ~~A description of all parametric controls, their appropriate settings as correlated with biological indicators, and calibration requirements;~~
- 4. ~~A description of proper responses, including identification of system upsets (i.e., power failure, jamming, inadequate treatment conditions) and emergency conditions (i.e., fire, explosion, release~~

of chemical or biohazardous materials);

5. A description of personal protective equipment requirements for routine, abnormal, and emergency operations; and

6. A description of all potential occupational safety and health risks posed by the equipment and its use.

B. The facility shall additionally develop a written treatment equipment operations plan that will include:

1. Responsibility delegation for safe and effective equipment operation to operating personnel;

2. A description of operating parameters that must be monitored to ensure effective treatment;

3. A description of all process monitoring instrumentation and established ranges for all operating parameters;

4. A description of the methods required to ensure process monitoring instrumentation is operating properly; and

5. A description of methods and schedules for periodic calibration of process monitoring instrumentation.

C. The facility shall document and keep on record copies of all training for at least three years.

~~FORMS (9VAC20-120)(Repealed)~~

~~FORMS (9VAC20-120)~~

~~[Solid Waste Management Facility Permit Applicant's Disclosure Statement \(Cover Sheet\), DEQ Form DISC-01 \(rev. 8/2018\)](#)~~

~~[Solid Waste Management Facility Permit Applicant's Disclosure Statement – Key Personnel Statement, DEQ Form DISC-02 \(rev. 8/2018\)](#)~~

~~[Local Government Certification Request, DEQ Form CERT-01 \(rev. 8/2018\)](#)~~

~~[Petition for Evaluation and Approval of Regulated Medical Waste Treatment Technology, DEQ Form RMWTP-01 \(rev. 8/2018\)](#)~~

## Chapter 121

### Regulated Medical Waste Management Regulations

#### Part I

#### Definitions

#### **9VAC20-121-10. Definitions.**

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise. Chapter 14 (§ 10.1-1400 et seq.) of Title 10.1 of the Code of Virginia defines words and terms that supplement those in this chapter. The Solid Waste Management Regulations (9VAC20-81) define additional words and terms that supplement those in the statutes and this chapter. When the statutes, as cited, and the solid waste management regulations, as cited, conflict, the definitions of the statutes are controlling.

"Approved sanitary sewer system" means a network of sewers serving a facility that has been approved in writing by the Virginia Department of Health, including affiliated local health departments. Such sewer systems may be approved septic tank or drainfield systems and onsite treatment systems, or they may be a part of a collection system served by a VPDES permitted treatment works.

"Ash" means the residual waste material produced from an incineration process or any combustion.

"ASTM" means the American Society for Testing and Materials.

"Autoclave" means a wet thermal [ sterilization treatment ] process that uses saturated steam under a specified amount of pressure for a specified exposure time and at a specific temperature.

"Bioaerosol" means a suspension of airborne particles, generally comprised of microorganisms (e.g., bacteria, viruses) or materials of biological origin released from humans, animals, plants, soil, water, or other sources. Particles range in size from very small to very large, and could include liquid droplets and materials left behind after such droplets evaporate (known as "droplet nuclei").

"Bioburden" means the degree of microbial contamination, including the type and total population of organisms, the number of spore formers present, and their resistance on any material and in a given amount of waste material prior to undergoing treatment.

"Biohazard" means biological substances that pose a threat to the health of living organisms, primarily that of humans, but can include substances harmful to animals.

"Biological indicator" means a preparation of a specific microorganism of a known concentration and resistance to a specific treatment process or to a known physical or chemical condition and is used to evaluate the capability of a process to effectively treat regulated medical waste. "Biological indicators" include bacterial spores or other microorganisms inoculated onto carriers (such as spore strips), spore suspensions, and self-contained biological indicators.

"Biological toxin" or "toxin" means a poison, especially a protein or conjugated protein produced by certain animals, plants, and pathogenic bacteria that is highly poisonous for other living organisms.

"Biologicals" means any preparations (sera, nonviable vaccines, vaccines attenuated in a manner that prevents propagation, antigens, toxins, and antitoxins) derived from a living organism or its products for use in diagnosis, immunization, or treatment of human beings or animals.

"Blood" means human blood, human blood components (e.g., serum and plasma), and products made from human blood.

"Bloodborne pathogen" means pathogenic microorganisms that are present in human blood (including human blood components and products made from human blood) that can cause disease in humans.

"Board" means the Virginia Waste Management Board.

"Body fluids" means liquid emanating or derived from humans, including blood; cerebrospinal, synovial, pleural, peritoneal, and pericardial fluids; semen and vaginal secretions; amniotic fluid; and any other body fluids that are contaminated with blood, mixed or combined with body fluids, or suspected by the health care professional in charge of being capable of producing an infectious disease in humans. This term does not include [ toenail ] and skin clippings, breast milk, sputum, semen, teeth, sweat, tears, urine, vomitus, or saliva that are not contaminated with visible blood unless transmission of an infectious disease is possible as determined by a health care professional.

"Calibration" means the demonstration that a measuring device produces accurate results within specified limits of its operating range.

"Captive regulated medical waste management facility" means a regulated medical waste management facility that is located on property owned or controlled by the generator of all waste managed or disposed of at that facility.

"Category A infectious substance" means an infectious substance in a form capable of causing permanent disability or life-threatening or fatal disease in otherwise healthy humans or animals when exposure to the substance occurs. Category A infectious substances are defined by 49 CFR 173.134 of the U.S. Department of Transportation Hazardous Materials Regulations.

"Category A waste" means wastes that are contaminated with a Category A infectious substance and must be packaged and transported in accordance with the U.S. Department of Transportation Hazardous Materials Regulations or an applicable DOT special permit.

"Challenge testing" means periodic monitoring or testing of a regulated medical waste treatment device or system that employs the use of biological indicators to demonstrate continued, effective operation of the device or system.

"Closure" means the act of securing a regulated medical waste management facility and terminating use of the facility for management of regulated medical waste pursuant to the requirements of this chapter.

"Container" means any portable enclosure in which a material is stored, transported, treated, or otherwise handled.

"Contaminated" means the presence or the reasonably anticipated presence of blood or other body fluids, infectious agent, biohazard, or biological toxin on an item or surface.

"Cremains" means the ash or bone shadows that remain after cremation.

"Culture" means an infectious substance containing a pathogen that is intentionally propagated. "Culture" does not include a human or animal patient specimen.

"Cultures and stock" means materials derived from the management (e.g., the systems used to grow and maintain infectious agents in vitro, including nutrient agars, gels, broths, and cell lines) of agents infectious to humans, and associated biologicals, from medical or pathological laboratories, from research and industrial laboratories, or from the production of biologicals and includes discarded live or attenuated vaccines capable of propagation, or culture dishes and devices used to transfer, inoculate, or mix cultures.

"Cycle" means the total operating time required for a device to treat regulated medical waste, and for an autoclave, includes warm-up, residence time, and cool down time.

"D-value" or "decimal reduction value" means the thermal resistance or time in minutes at a specific temperature that is required for a one-log or 90% reduction of a specific microbial population under specified treatment conditions.

"Decontamination" means the use of physical or chemical means to remove, inactivate, or destroy human pathogens on a surface or item to the point where they are no longer capable of transmitting disease and the surface or item is rendered safe for handling, use, or disposal.

"Department" or "DEQ" means the Virginia Department of Environmental Quality.

"Director" means the Director of the Department of Environmental Quality or the director's designee.

"Discard" means to throw away or reject. When a material is soiled, contaminated, or no longer usable, and it is placed in a waste receptacle for disposal or treatment prior to disposal, it is considered discarded.

"Discharge" or "waste discharge" means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of regulated medical waste into or on any land or state waters.

"Disinfectant" means an antimicrobial product used on hard inanimate surfaces and objects to destroy or irreversibly inactivate infectious agents, such as bacteria, fungi, and viruses, but not necessarily bacterial spores. There are three types of disinfectants registered by EPA based on the type of efficacy data submitted: limited, general or broad-spectrum, and hospital grade.

"Disinfection" means any procedure that involves the application of an antimicrobial agent (disinfectant) registered with EPA that is consistent with its approved use in accordance with the manufacturer's instructions. Disinfection shall not be considered a form of treatment, and appropriate handling of disinfected materials, as well as health and safety precautions, shall still be required to achieve protection of public health and the environment.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that such solid waste or any constituent of it may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

"Disposal facility" means a facility or part of a facility at which solid waste is intentionally placed into or on any land or water, and at which the solid waste will remain after closure.

"Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

"Efficacy testing" means testing of a treatment method, system, or device, conducted by a laboratory, independent of the system manufacturer, in conformance with generally recognized scientific principles, microbiologic examinations, or other pertinent assessments of waste material to establish operating parameters for effective treatment of regulated medical waste.

"Effluent" means liquid waste such as spills, wash water, and wastewater emanating from regulated medical waste storage, transfer, and treatment areas.

"Empty" means wastes have been removed from a container using the practices commonly employed to remove materials of that type such as pouring, pumping, or aspirating.

"EPA" means the U.S. Environmental Protection Agency.

"Exposure time" or "residence time" means the length of time at which the treatment method is held at a specific temperature, pressure, irradiation level, or chemical concentration for effective treatment of regulated medical waste.

"Federal agency" means any department, agency, or other instrumentality of the federal government, any independent agency, or establishment of the federal government, including any government corporation and the Government Printing Office.

"Generate" means to cause waste to become subject to regulation. At the point a regulated medical waste is discarded, it has been generated. Timeframes associated with storage and refrigeration are linked to the date the waste is placed in storage, not the date the waste is generated.

"Generator" means any person, by site location, whose act or process produces regulated medical waste identified or defined in this chapter or whose act first causes a regulated medical waste to become subject to this chapter.

"Hazardous material" means a substance or material that has been so designated under 49 CFR Parts 171 and 173.

"Hazardous waste" means any solid waste defined as a "hazardous waste" by the Virginia Hazardous Waste Management Regulations.

"Health care professional" means a medical doctor or nurse practicing under a license issued by the Department of Health Professions.

"Household sharps" means any needles, syringes with attached needles, lancets, auto injectors, pen needles, and any other devices that are used to penetrate the skin for the delivery of medications that are derived from households through self-care, rather than under the care of a home health care professional or at a health care facility. "Household sharps" are sharps that, except for the fact that they are derived from a household, would otherwise be classified as a regulated medical waste in accordance with this chapter.

"Household waste" means any waste material, including garbage, trash, and refuse, derived from households. Households include single and multiple residences, hotels and motels, bunkhouses, ranger

stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. "Household waste" does not include sanitary waste in septic tanks (septage) that is regulated by other state agencies. Waste generated by a health care professional or nonstationary health care provider administering care in a household, mobile unit, or commercially operated residence, or outpatient recovery facility that meets the definition of regulated medical waste is not household waste and must be managed as regulated medical waste.

"Inactivated" or "inactivation" means having reached the point, through autoclaving, incineration, or other validated treatment process, where the waste material is no longer infectious, does not pose an infection risk, and is not considered to be a regulated medical waste.

"Infectious agent" means any organism or agent, including a synthetic agent, that causes disease or an adverse health impact in humans or can be transferred to humans, as well as animals that have an economic impact on human society.

"Infectious substance" means a material known or reasonably expected to contain a pathogen, including bacteria, viruses, rickettsiae, parasites, fungi, or prions, that can cause disease in humans or animals.

"Inner packaging" means a packaging that is the primary container, such as a red bag or sharps container, for which an outer packaging is required for transport.

"Nonstationary health care provider" means those persons who routinely provide health care at locations that change each day or frequently. This term includes traveling doctors, nurses, midwives, and others providing care in patients' homes, first aid providers operating from emergency vehicles, and mobile blood service collection stations.

"Offsite" means any site that does not meet the definition of onsite, as defined in this part, including areas of a facility that are not on geographically contiguous property or outside of the boundary of the site.

"Onsite" means the same or geographically contiguous property, which may be divided by public or private right-of-way, provided the entrance and exit to the facility are controlled by the owner or the operator of the facility. Noncontiguous properties owned by the same person but connected by a right-of-way that he controls and to which the public does not have access are also considered onsite property.

"Operating parameters" means the specific conditions of pressure, temperature, residence time, chemical concentration, and other physical or engineering condition established through efficacy testing of a treatment method and verified through validation testing to be effective for treatment of regulated medical waste.

"Outer packaging" means packaging that is the secondary container or the outermost enclosure, such as a disposable or reusable rigid pail, fiberboard carton, drum, or portable bin that is under normal conditions of use leak-resistant, strong enough to prevent tearing or bursting, puncture resistant, impervious to moisture, has leak proof sides and bottom, has a tight fitting cover or is otherwise closable, and is in good repair, of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner packaging.

"Overpack" means an enclosure that is used to provide protection or convenience in handling of a package or to consolidate two or more packages. "Overpack" does not include a vehicle, freight container, or aircraft unit load device. Examples of overpacks are one or more packages (i) placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means; or (ii) placed in a protective outer packaging such as a box or crate.

"Packaging" means the assembly of one or more containers and any other components necessary to assure compliance with minimum packaging requirements under Regulations Governing the Transportation of Hazardous Materials (9VAC20-110) or this chapter.

"Parametric controls" or "parametric monitoring device" means real time monitoring instrumentation integral to the treatment unit that is designed to quantitatively measure operational parameters, such as temperature, pressure, or other parameter, and provide an electronic or paper record of measurements that can be correlated to treatment. Parametric controls may be used to regulate or maintain preset operating parameters.

"Pathogen" means a microorganism, including bacteria, viruses, rickettsiae, parasites or fungi, or other agent, such as a proteinaceous infectious particle (prion), that can cause disease in humans or animals.

"Patient specimen" means human or animal materials collected directly from humans or animals and transported for research, diagnosis, clinical or investigational activities, or disease treatment or prevention. "Patient specimen" includes excreta, secreta, blood and its components, tissue and tissue swabs, body parts, and specimens in transport media (e.g., transwabs, culture media, and blood culture bottles) until such time that the patient specimen is discarded.

"Prion" means a pathogenic agent that is able to cause abnormal folding of specific normal cellular proteins called "prion proteins," which are found most abundantly in the brain. This abnormal folding is

associated with neurological disease. Prions are proteinaceous infectious particles that are highly resistant to all but the most destructive methods of inactivation. They require specific inactivation, disposal, and containment procedures.

"Process rate" means the maximum rate of waste acceptance that a regulated medical waste management facility can process for transfer, treatment, or storage. This rate is limited by the capabilities of equipment, personnel, and infrastructure.

"Processing" means preparation, treatment, or conversion of regulated medical waste by a series of actions, changes, or functions that bring about a decided result.

"Regulated medical waste" or "RMW" means solid wastes defined to be regulated medical wastes in Part II (9VAC20-121-90) this chapter.

"Regulated medical waste management facility" means a site used for planned transfer, treatment, or disposal of regulated medical waste. A regulated medical waste management facility may consist of more than one transfer, treatment, or disposal unit. A regulated medical waste management facility is a type of solid waste management facility.

"Regulated medical waste transfer station" means a regulated medical waste management facility where regulated medical waste is received for the purpose of its subsequent consolidation, over-packing, storage, trans-loading, or subsequent transfer to another regulated medical waste management facility for further processing, treatment, transfer, or disposal. Parking a vehicle containing regulated medical waste during transportation for 24 hours or more is considered a regulated medical waste transfer station.

"Regulated medical waste treatment facility" means a regulated medical waste management facility where regulated medical waste is treated so that it no longer constitutes a threat to public health and the environment, and the waste is subsequently managed as solid waste.

"Reusable medical device" means a device, including surgical forceps, endoscopes, and stethoscopes, that is designed and labeled for multiple uses and is reprocessed by thorough cleaning followed by high-level disinfection or sterilization between patients.

"Sanitizer" means a substance, or mixture of substances, that reduces the bacterial population in the inanimate environment by significant numbers, (e.g., 3 log<sub>10</sub> reduction) or more but does not destroy or eliminate all bacteria.

"Select agent or toxin" means a subset of biological agents and toxins that the U.S. Department of Health and Human Services and U.S. Department of Agriculture have determined have the potential to pose a severe threat to public health and safety, to animal or plant health, or to animal or plant products. Select agents and toxins are specified under 42 CFR §§ 73.3 and 73.4, 9 CFR §§ 121.3 and 121.4, and 7 CFR § 331.3.

"Sharps" means [ ~~needles, scalpels, knives, lancets, syringes with attached needles, suture needles, pasteur pipettes, broken glass, broken rigid plastic, and similar items having a point or sharp edge or that are likely to cause percutaneous injury or break during transportation and result in a point or sharp edge that may puncture or compromise the integrity of the container.~~ any object contaminated with a pathogen or that may become contaminated with a pathogen through handling or during transportation and also capable of cutting or penetrating skin or a packaging material. Sharps include, but are not limited to, needles, syringes, scalpels, broken glass, culture slides, culture dishes, broken capillary tubes, broken rigid plastic, and exposed ends of dental wires. Discarded unused sharps contained in the original liner and outer packaging are excluded from this definition. ]

"Sharps drop box" means a secure, tamper-proof sharps container for the temporary storage of only household sharps provided for the convenience of individual home generators who choose to transport their own household sharps to the collection point and where collected sharps are packaged, labeled, and managed as regulated medical waste.

"Shipment" means the movement or quantity conveyed by a transporter of a regulated medical waste between a generator and a designated facility or a subsequent transporter.

"Shipping paper" means a shipping order, bill of lading, manifest, or other shipping document serving a similar purpose and containing the information required by the U.S. Department of Transportation Hazardous Materials Regulations.

"Site" means all land or water and structures, other appurtenances, and improvements on them used for treating, storing, and disposing of regulated medical waste. This term includes adjacent land within the facility boundary used for the utility systems such as repair, storage, shipping or processing areas, or other areas incident to the management of regulated medical waste.

"Solid waste" means any of those materials defined as "solid waste" in 9VAC20-81-95 of the Virginia Solid Waste Management Regulations. Regulated medical waste that has been treated in accordance with this chapter is considered solid waste.

"Spill" means any accidental or unpermitted discharge, leaking, pumping, pouring, emitting, or dumping

of wastes or materials that, when spilled, become wastes.

"Spore" means a dormant form of a microorganism that is more resistant to adverse conditions.

"Sterilize" means to inactivate all microorganisms on materials or waste.

"Storage" means the holding, including during transportation, of regulated medical waste.

"Surrogate waste load" means a load of noninfectious material used in validation test runs of treatment units that represents materials and packaging that would be found in the regulated medical waste stream to be treated by the facility.

"Transportation" or "transport" means the movement of regulated medical waste by air, rail, highway, or water.

"Transporter" means a person authorized in accordance with federal and state regulations and engaged in transportation or movement of regulated waste.

"Treatment" means any method, technology, or process designed to change the character or composition of any regulated medical waste so that it is inactivated and no longer constitutes a threat to public health and the environment. Treatment does not include compaction or disinfection.

"Treatment method" means a process including wet thermal sterilization (such as autoclaving) or dry thermal sterilization, chemical sterilization, combustion or incineration, and alternate technologies used to treat regulated medical waste.

"Thermochemical indicator" means a device (e.g., tape, paper strips, integrators, or small ampoules) that responds to the treatment process parameters in some measurable fashion, such as changing color or becoming striped when subjected to temperatures intended to provide sterilization of materials.

"Thermochemical recording device" means a device (e.g., thermocouple, wireless data loggers, or chemical monitoring probes) that reacts in response to one or more critical treatment parameters (such as temperature) and yields a quantifiable value that correlates to microbial lethality or predictable inactivation of microbial spore populations.

"Unauthorized waste" means waste that is not authorized by the department to be managed by [ a the ] regulated medical waste management facility. Examples are [ site-specific and ] dependent upon the treatment technology and permit but may include chemotherapeutic, pathological, pharmaceutical, radioactive, chemical, hazardous, or other wastes.

"Used health care product" means a medical, diagnostic, or research device or piece of equipment, or personal care product used by consumers, medical professionals, or pharmaceutical providers that does not otherwise meet the definition of patient specimen, biological product, or regulated medical waste, but is contaminated with potentially infectious body fluids or materials and is not decontaminated or disinfected to remove or mitigate the infectious hazard prior to transportation.

"Validation testing" means procedures conducted at the site of a regulated medical waste treatment facility prior to initial operation of a treatment system or device, the purpose of which is to demonstrate, through established operating parameters, the effective treatment of regulated medical waste.

"Vector" means a living animal, insect, or other arthropod that is capable of transmitting a pathogen or infectious disease from one organism to another.

"VPDES" means Virginia Pollutant Discharge Elimination System, the Virginia system for the issuance of permits pursuant to the Permit Regulation (9VAC25-31), the State Water Control Law (§ 62.1-44.2 et seq. of the Code of Virginia), and § 402 of the Clean Water Act (33 USC § 1251 et seq.).

"Waste management" means the entire process of managing waste from the point of generation to final disposition. For regulated medical waste, the process includes collection and segregation, characterization, classification, packaging, labeling, processing, staging, storing, decontamination, treatment, transportation, and disposal, as well as monitoring of waste management operations and sites to ensure that the management of these wastes is protective of human health and the environment.

"Waste management facility" means all contiguous land and structures, other appurtenances, and improvements on them used for treating, storing, or disposing of waste.

"Z-value" means the temperature change required for the D-value to change by 1 log (i.e., by a factor of 10) for a specific microbial population under specified treatment conditions.

## Part II

### General Information

#### **9VAC20-121-20. Purpose.**

The purpose of this chapter is to establish standards and procedures pertaining to regulated medical waste management in the Commonwealth of Virginia in order to protect the public health and public safety.

and to enhance the environment and natural resources.

**9VAC20-121-30. Administration.**

A. The Virginia Waste Management Board promulgates and enforces regulations that it deems necessary to protect the public health and safety, the environment, and natural resources.

B. The director is authorized and directed to administer this chapter in accordance with the Virginia Waste Management Act (§§ 10.1-1400 through 10.1-1457 of the Code of Virginia).

C. Nothing in this chapter shall limit or affect the power of the director, by the director's order, to prohibit storage, transfer, treatment, or disposal of any waste or require special handling requirements the director determines are necessary to protect the public health or the environment.

**9VAC20-121-40. Applicability.**

A. This chapter applies (i) to all persons who generate or transport, store, transfer, process, treat, dispose, or otherwise manage regulated medical waste; own or operate a regulated medical waste management facility; or allow a regulated medical waste management facility to be operated on their property in the Commonwealth of Virginia; and (ii) to those who seek approval to engage in these activities, except those specifically exempted or excluded elsewhere in this chapter. A "person" may include an individual, firm, company, corporation, partnership, association, state or federal government and any agency thereof, municipality, commission, political subdivision of a state, or any interstate body.

B. All existing regulated medical waste management facilities must comply with this chapter. Existing facilities, including those with an existing permit, must submit [ a complete updated ] permit application [ documents ] by (insert date [ six eighteen ] months after the effective date of this regulation) to come into compliance with this chapter. [ If the updated application includes changes that result in a different type of facility as outlined in 9VAC20-121-300 C 2, a complete permit-by-rule application shall be required. Existing facilities which only make changes to come into compliance with the regulations shall submit the following updated documents, as applicable, in accordance with 9VAC20-121-310:

1. DEQ Form RMW PBR;
2. Disclosure statements (DEQ Form DISC-01 and DISC-02), if changes in key personnel;
3. Design and construction certification by a professional engineer, in accordance with 9VAC20-121-310 A 2 c;
4. Design plans in accordance with 9VAC20-121-310 A 2 d;
5. Facility standards certification and a copy of the Regulated Medical Waste Management Plan in accordance with 9VAC20-121-310 A 2 f;
6. Treatment Plan in accordance with 9VAC20-121-310 A 2 h and i, respectively;
7. Closure Plan and closure cost estimate, in accordance with 9VAC20-121-310 A 2 j and m;
8. Certification from the SCC, in accordance with 9VAC20-121-310 A 2 l, if not previously provided; and
9. Applicable permit fee in accordance with 9VAC20-121-310 A 2 n. ]

**9VAC20-121-50. Prohibitions.**

A. No person shall operate any regulated medical waste management facility for the transfer, treatment, or disposal of regulated medical waste without a permit from the director.

B. No person shall allow regulated medical waste to be stored, disposed, or otherwise managed on the person's property except in accordance with this chapter.

C. It shall be the duty of all persons to manage their regulated medical waste in a legal manner. Untreated regulated medical waste, including its packaging, shall not be used, reused, or reclaimed.

D. No person shall:

1. Allow regulated medical waste to drain or discharge into surface waters except when treated onsite and discharged into surface water as authorized under a Virginia Pollutant Discharge Elimination System (VPDES) Permit (9VAC25-31).
2. Cause the discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act (33 USC § 1251 et seq.), including the VPDES requirements and Virginia Water Quality Standards (9VAC25-260).
3. Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an area wide or statewide water quality management plan that has been approved under § 208 or 319 of the Clean Water Act (33 USC § 1251 et seq.) or violates any requirement of the Virginia Water Quality Standards (9VAC25-260).
4. Allow regulated medical waste to be deposited in or to enter any surface waters, groundwaters, or

storm drains.

E. Any person who violates subsection A, B, C, or D of this section shall immediately cease the activity of improper management and shall initiate waste removal, cleanup, or closure.

**9VAC20-121-60. Enforcement and appeal.**

A. All administrative enforcement and appeals taken from actions of the director relative to the provisions of this chapter shall be governed by the Virginia Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

B. The Virginia Waste Management Board or the director may enforce the provisions of this chapter utilizing all applicable procedures under the law. The powers of the board and the director include those established under Chapter 11.1 (§ 10.1-1182 et seq. of the Code of Virginia); in Article 8 (§ 10.1-1455 et seq.) of Chapter 14 of Title 10.1 of the Code of Virginia; and particularly in § 10.1-1186 of the Code of Virginia. These sections describe the right of entry for inspections; the issuance of orders, penalties, injunctions; and other provisions and procedures for enforcement of this chapter.

**9VAC20-121-70. Public participation and information.**

A. All permits for regulated medical waste management facilities are subject to public participation, as specified in Part V (9VAC20-121-300 et seq.) of this chapter.

B. Modifications to regulated medical waste management facility permits shall be subject to public participation in accordance with Part V (9VAC20-121-300 et seq.) of this chapter.

C. Dockets of all permitting actions, enforcement actions, and administrative actions relative to this chapter shall be available to the public for review, consistent with the Virginia Administrative Process Act, Virginia Freedom of Information Act (§ 2.2-3700 of the Code of Virginia), and the provisions of this chapter.

D. Public participation in the compliance evaluation and enforcement programs is encouraged. The department will:

1. Investigate all citizen complaints and provide written responses to all signed, written complaints from citizens, concerning matters within the board's purview;
2. Not oppose intervention by any citizen in a suit brought before a court by the department as a result of the enforcement action; and
3. Provide notice on the department's [ internet ] website and provide at least 30 days of public comment on proposed settlements of civil enforcement actions, except where the settlement requires some immediate action. Where a public comment period is not held prior to the settlement of an enforcement action, public notice will still be provided following the settlement.

**9VAC20-121-80. Relationship to other bodies of regulation.**

A. The Solid Waste Management Regulations (9VAC20-81) address other requirements for solid waste management. If there is a conflict between the provisions of this chapter and the solid waste management regulations, this chapter is controlling.

B. Regulated medical waste management facilities must also comply with any applicable sections of the Hazardous Waste Management Regulations (9VAC20-60). If there is a conflict between the provisions of this chapter and the hazardous waste management regulations, 9VAC20-60 is controlling.

C. Intrastate shipment of hazardous materials is subject to the Regulations Governing the Transportation of Hazardous Materials (9VAC20-110). If there is a conflict between the provisions of this chapter and the hazardous materials transportation regulations, 9VAC20-110 is controlling.

D. Generators of regulated medical waste and regulated medical waste management facilities may be subject to the general industry standard for occupational exposure to bloodborne pathogens in 16VAC25-90-1910.1030 (29 CFR 1910.1030).

E. Persons transporting regulated medical waste are subject to the federal requirements in the U.S. Department of Transportation Hazardous Material Regulations at 49 CFR Parts 171 through 180.

F. Facilities managing select agents or toxins are subject to the Regulations for Disease Reporting and Control (12VAC5-90) as administered by the Virginia Department of Health. Facilities that possess, use, or transfer select agents or toxins are also subject to registration, reporting, inactivation, destruction, and compliance with the U.S. Department of Health and Human Services and U.S. Department of Agriculture's Federal Select Agent Program and the federal select agent regulations at 7 CFR Part 331, 9 CFR Part 121, and 42 CFR Part 73.

G. If there is a conflict between provisions of this chapter and adopted regulations of another agency of the Commonwealth, the provisions of these regulations are set aside to the extent necessary to allow compliance with the regulations of the other agency. If neither regulation controls, the more stringent standard applies.

H. Nothing in this chapter either precludes or enables a local governing body to adopt ordinances.

Compliance with one body of regulation does not ensure compliance with the other, and normally, both bodies of regulation must be fully complied with.

I. The Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70) shall be applicable in all parts to regulated medical waste management facilities. Nothing in this chapter governing regulated medical waste management shall be considered to delete or alter any requirements of the department as set out in Financial Assurance Regulations for Solid Waste Facilities.

J. The U.S. Nuclear Regulatory Commission, 10 CFR, regulates management of radioactive materials. The Virginia Department of Health has established other requirements in accordance with Title 32.1 of the Code of Virginia. No regulated medical waste containing radioactive materials, regardless of amount or origin, shall be treated unless its management and treatment are in full compliance with these two bodies of regulations and are deemed by both regulations to represent no threat to public health and the environment.

### **9VAC20-121-90. Identification of regulated medical waste.**

A. A solid waste is a regulated medical waste subject to this chapter if it meets the criteria under subsection B of this section, unless specifically excluded or exempted by subsection C or D of this section. Claims that materials are not regulated medical wastes or are conditionally exempt from regulation shall demonstrate that the material meets the terms of an exemption. In doing so, appropriate documentation shall be provided to demonstrate that the material is not a regulated medical waste or is exempt from regulation.

B. A solid waste is a regulated medical waste if it meets either of the two criteria of this subsection:

1. The solid waste is suspected by the health care professional in charge of being capable of producing an infectious disease in humans. A solid waste shall be considered to be capable of producing an infectious disease if it has been or is likely to have been contaminated by an organism likely to be pathogenic to healthy humans, such organism is not routinely and freely available in the community, and if such organism has a significant probability of being present in sufficient quantities and with sufficient virulence to transmit disease. If the exact cause of a patient's illness is unknown, but the health care professional in charge suspects a contagious disease is the cause, the likelihood of pathogen transmission shall be assessed based on the pathogen suspected of being the cause of the illness.

2. The solid waste or solid waste stream is identified in the following list:

a. Discarded cultures, stocks, specimens, vaccines, and associated items likely to have been contaminated by them are regulated medical wastes if they are likely to contain organisms likely to be pathogenic to healthy humans. Wastes from the production of biologicals and antibiotics likely to have been contaminated by organisms likely to be pathogenic to healthy humans are regulated medical wastes;

b. Wastes consisting of human blood or body fluids, containers of human blood or body fluids, and items contaminated with human blood or body fluids are regulated medical waste. Human blood and body fluids solidified by absorbent gel, powder, or similar means are also regulated medical waste.

c. Human pathological and anatomical waste, including tissues, organs, body parts, and other pathological or anatomical wastes;

d. Sharps likely to be contaminated with [ organisms that are pathogenic to healthy humans, and all needles, scalpels, lancets, syringes with attached needles, suture needles, regardless of whether they have been used in patient care, are regulated medical wastes a pathogen or that may become contaminated with a pathogen through handling or during transportation and also capable of cutting or penetrating skin or a packaging material ] . This also includes sharps generated through veterinary practice, acupuncture needles, and household sharps collected in a sharps drop box;

e. When animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials, or any other reason, the animal carcasses, body parts, bedding material, and all other wastes likely to have been contaminated are regulated medical wastes when discarded, disposed of, or placed in storage;

f. Wastes that are contaminated with a Category A infectious substance are regulated medical waste that shall be managed in accordance with 9VAC20-121-160;

g. Any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any regulated medical waste; and

h. Any solid waste contaminated by or mixed with regulated medical waste, including solid wastes that are packaged as regulated medical wastes.

C. The following materials are not solid wastes or regulated medical wastes:

1. Domestic sewage, including wastes that are not stored and are disposed of in a sanitary sewer system (with or without grinding).
2. Any mixture of domestic sewage and other wastes that pass through a sewer system to a wastewater treatment works permitted by the State Water Control Board or the Virginia Department of Health.
3. Sanitary waste from septic tanks (septage) and sewage holding tanks that is regulated by other state agencies.
4. Human remains when:
  - a. Under the control of a licensed physician or dentist, when the remains are being used or examined for medical purposes and are not solid wastes;
  - b. Provided to qualified educational programs as anatomical gifts;
  - c. Removed during a medical procedure and retained by the patient for religious or other purposes provided that the remains are not a source of disease transmission, as determined by a health care professional; [ and or ]
  - d. Properly interred in a cemetery or in preparation by a licensed funeral director or embalmer for such interment or cremation.
5. Individual human and animal cremains.
6. Dead or diseased animals subject to regulation by the Virginia Department of Agriculture and Consumer Services.
7. Bed linen, instruments, medical care equipment, and other materials that are routinely cleaned and reused for their original purpose are not subject to this chapter until they are discarded and are a solid waste unless a health care professional has determined these items to be to be capable of producing an infectious disease in humans in accordance with 9VAC20-121-90 B 1. These items do not include reusable carts or containers used in the management of regulated medical waste, which shall be managed in accordance with 9VAC20-121-130.
8. Used health care products and reusable medical devices, being returned to a manufacturer or third party for reprocessing (cleaning and disinfecting or sterilizing) and reuse if packaged and labeled in accordance with 49 CFR 173.134(b)(12)(ii)(A) through (D) and reprocessed in accordance with applicable U.S. Food and Drug Administration requirements. Used health care products and contaminated medical devices or equipment [ that meet either of the two criteria in 9VAC20-121-90 B ] being sent offsite for recycling or disposal are regulated medical waste and shall be managed in accordance with this chapter. These items do not include reusable carts or containers used in the management of regulated medical waste, which shall be managed in accordance with 9VAC20-121-130.
9. The following items while in use: samples for laboratory tests, patient specimens, and criminal evidence items taken during enforcement procedures that meet the definition of regulated medical waste. Once these items are no longer needed for their intended purpose, they shall be managed as regulated medical waste unless exempt under 9VAC20-121-90 D.
10. Tissue blocks of organs or tissues (except those associated with prions) that have been fixed in paraffin or similar embedding materials for cytological or histological examinations. Once these items are no longer needed for their intended purpose, they [ shall may ] be managed as solid waste.

D. The following solid wastes are not regulated medical wastes for purpose of this chapter:

1. Wastes that have been treated in accordance with this chapter are no longer regulated medical waste and may be used, reused, or reclaimed in accordance with the provisions of the Virginia Solid Waste Management Regulations (9VAC20-81), provided the following requirements are met:
  - a. Treated waste that was once regulated but is no longer regulated medical waste shall not be [ packaged repackaged ] as regulated medical waste. Solid waste [ packaged repackaged ] as regulated medical waste is regulated medical waste.
  - b. If the solid waste is no longer regulated medical waste because of treatment, the generator and the permitted treatment facility shall maintain a record of the treatment for three years after treatment. Generators treating regulated medical waste onsite shall maintain records in accordance with applicable provisions of Part V (9VAC20-121-300 et seq.) of this chapter. Generators shipping regulated medical waste offsite for treatment shall maintain records in accordance with 9VAC20-121-100 I.
  - c. The generator or proposed user of treated regulated medical waste may request that the department make a case-specific determination that the solid waste may be beneficially used in

a manufacturing process to make a product or as an effective substitute for a commercial product. The requestor shall submit a beneficial use demonstration in accordance with the requirements of 9VAC20-81-97.

2. Household waste, including household sharps. Household sharps shall be placed in an opaque, leak proof, puncture resistant container that is closed, tightly sealed, and labeled for home use before being mixed with other solid wastes or disposed. Household sharps may be placed in U.S. Food and Drug Administration-cleared sharps containers if specifically designed and labeled for home use. Household sharps containers shall be labeled "HOUSEHOLD SHARPS – DO NOT RECYCLE" or "HOME GENERATED SHARPS – DO NOT RECYCLE" printed in large legible text and permanent ink. Household sharps centrally collected in a sharps drop box shall be managed as regulated medical waste in accordance with 9VAC20-121-300 E 1. Medical waste generated by a health care professional administering care in a household is regulated medical waste and must be managed in accordance with this chapter.
3. [ Toenail Nail ] and skin clippings, breast milk, sputum, semen, teeth, sweat, tears, urine, vomitus, or saliva, unless contaminated with visible blood or a health care professional has determined these items to be capable of producing an infectious disease in humans in accordance with 9VAC20-121-90 B 1.
4. Dental amalgam managed in accordance with the Dental Rule (40 CFR Part 441).
5. Meat or other food items being discarded because of spoilage, contamination, or recall.
6. The following discarded items, when they are unused or expired: health care products, medical equipment, medical devices, [ unused sharps in the original packaging, ] or other materials, unless a health care professional has determined these items to be [ to be ] capable of producing an infectious disease in humans in accordance with 9VAC20-121-90 B 1. [ This does not apply to unused or expired sharps, which are a regulated medical waste in accordance with 9VAC20-121-90 B-2-d. ]
7. Used products for personal hygiene, such as diapers, facial tissues, underpads, adult incontinence products, sanitary napkins, and feminine hygiene items, unless a health care professional has determined these items to be capable of producing an infectious disease in humans in accordance with 9VAC20-121-90 B 1.
8. The following discarded items when they are empty: urine collection bags and tubing, suction canisters and tubing, IV solution bags and tubing, colostomy bags, ileostomy bags, urostomy bags, plastic fluid containers, enteral feeding containers and tubing, hemovacs, urine bottles, and urine specimen cups, unless the items are subject to regulation under 16VAC25-90-1910.1030 (29 CFR 1910.1030) or a comparable state or federal standard.
9. The following discarded items: urinary catheters, suction catheters, plastic cannula, IV spikes, nasogastric tubes, oxygen tubing and cannula, ventilator tubing, enema bags and tubing, enema bottles, thermometer probe covers, irrigating feeding syringes, and bedpans or urinals, unless the items are subject to 16VAC25-90-1910.1030 (29 CFR 1910.1030) or a comparable state or federal standard.
10. Items such as bandages, gauze, or cotton swabs or other similar absorbent materials, unless at any time following use the items are saturated or would release human blood or human body fluids in a liquid or semiliquid state if compressed. Items that contain or that are caked with dried human blood or human body fluids and are capable of releasing these materials during handling are regulated medical waste. An item would be considered caked if it could release flakes or particles when handled.
11. Human blood and body fluids when solidified by absorbent gel, powder, or similar means as part of a spill cleanup at establishments engaged in operations other than health care or management of regulated medical waste. This category includes waste generated by stores, markets, office buildings, restaurants, businesses, schools, manufacturers, and commercial or industrial operations.
12. Waste generated from the care of an animal [ at a household or a farm ] when care is provided by the owner of the animal [ , such as at a household or farm ] . Waste generated [ by a veterinarian through veterinary practice that meets either of the two criteria of 9VAC20-121-90 B ] , such as sharps, must be managed as regulated medical waste.
13. Waste from cosmetology, ear and body piercing, nail salons, and tattoo establishments, except for sharps and unabsorbed human blood or body fluids.
14. Plant or animal wastes, such as bat guano, removed from construction or demolition projects when actions are taken to avoid worker exposure, including use of appropriate personal protective equipment, and the waste is managed in accordance with any applicable best management practice, special handling, and other precautions for processing or disposal.
15. Waste from food, drug, and cosmetics testing laboratories (except research laboratories) using

microbiological methods for the detection of human infectious agents, microbial toxins, or chemical residuals as part of routine quality assurance testing of food, drugs, or cosmetic products.

16. Wastes regulated by the Virginia Department of Health, the State Water Control Board, the Air Pollution Control Board, Department of Agriculture and Consumer Services, Federal Drug Administration, U.S. Department of Agriculture, or any other state or federal agency with such authority.

### Part III

#### Standards for Management of All Regulated Medical Waste

##### **9VAC20-121-100. General handling and generator requirements.**

A. Any person or facility handling, generating, storing, transporting, transferring, treating, or disposing of regulated medical waste shall comply with the general management requirements of this section.

B. ~~Regulated~~ All generators must identify and segregate regulated ] medical waste [ ~~shall be identified and segregated~~ ] from other waste, including radioactive waste, hazardous waste, and other solid waste, at the point of origin or as soon as practicable after generation. [ ~~If~~ When ] practical, [ the generator shall segregate ] regulated medical waste [ ~~shall also be segregated~~ ] based on the anticipated treatment method.

C. All generators must comply with the packaging, labeling, storage, reusable container, spill cleanup, transportation, and Category A waste management requirements for regulated medical waste outlined in Part III (9VAC20-121-100 et seq.) of this chapter, as applicable.

D. Anyone handling or packaging regulated medical waste and loading, unloading, or handling containers of regulated medical waste shall wear appropriate personal protective equipment in accordance with the standards for occupational exposure to bloodborne pathogens in the general industry standard in 16VAC25-90-1910.1030 (29 CFR 1910.1030).

E. All regulated medical waste shall be handled in a manner that maintains the integrity of the packaging at all times, prevents damage, leakage, and spills and provides protection from the elements, vectors, and trespassers.

F. Trash chutes shall not be used to manage regulated medical waste. If slides, cart tippers, conveyors, or similar equipment are used to move regulated medical waste from the point of generation to storage areas, between containers, or to vehicles or treatment devices, the movement and impact shall be controlled to maintain the integrity of the regulated medical waste packaging and prevent damage, leaks, and spills. Waste shall not be thrown, dumped, walked upon, or handled in any other manner that could result in spills or releases of regulated medical waste or damage to the packaging.

G. Except in accordance with 9VAC20-121-240 B, regulated medical waste shall not be manually or mechanically compacted, compressed, or subjected to violent mechanical stress prior to treatment; however, after regulated medical waste is fully treated and is no longer regulated medical waste, it may be compacted in a closed container in a safe and sanitary manner.

H. All regulated medical waste generated shall either be treated onsite in accordance with Part IV (9VAC20-121-200 et seq.) of this chapter or packaged, labeled, and transported offsite to a facility permitted to receive the waste for transfer, treatment, or disposal.

I. Generators of regulated medical waste are subject to the following recordkeeping requirements:

a. The generator shall maintain all records of onsite treatment or shipment offsite for a minimum of three years following treatment or shipment. All records shall be available for review by the department upon request.

b. Generators treating regulated medical waste onsite, regulated medical waste transfer stations, and all other regulated medical waste treatment or disposal facilities shall maintain records in accordance with applicable provisions of Part V (9VAC20-121-300 et seq.) of this chapter.

c. Generators shipping regulated medical waste offsite for transfer, treatment, or disposal shall maintain records, including copies of all shipping papers, specifying the date of shipment, amount of waste removed from the site, and the names, addresses, and telephone numbers of the transporter and the destination facility receiving the shipment for treatment or disposal.

d. If regulated medical waste is received from offsite, records shall be maintained for three years following receipt of the waste and shall include the date of receipt, name of each offsite generator (except for generators of household sharps using sharps drop boxes), amount of waste received, and dates of subsequent treatment or shipment offsite.

**9VAC20-121-110. Packaging and labeling of regulated medical waste.**

A. All regulated medical waste shall be appropriately packaged, labeled, and managed as required by this section.

B. The generator of regulated medical waste is responsible for the packaging and labeling of regulated medical waste. Contractors or other agents may provide services to the generator, including packaging and labeling of regulated medical waste; however, no contract or other relationship shall relieve the generator of the responsibility for packaging and labeling the regulated medical waste as required by this chapter.

C. No person shall receive for transportation, transfer, storage, or treatment any regulated medical waste that is not packaged and labeled in accordance with this chapter. Contractors or other agents may package or label regulated medical wastes to comply with this chapter, so long as the packaging and labeling is performed onsite where the regulated medical waste was generated and no transportation, storage, treatment, or disposal occurs prior to the packaging. Nothing in this section shall prevent the proper repackaging and further transportation of regulated medical waste that has spilled during transportation. [†]

D. All regulated medical waste shall be packaged and labeled onsite prior to storage, treatment, transport, or other management and at a minimum must conform with the following:

1. When regulated medical wastes are first discarded, they shall be placed directly in bags or containers meeting the requirements of the standards for occupational exposure to bloodborne pathogens in the general industry standard in 16VAC25-90-1910.1030 (29 CFR 1910.1030). The general industry standard requires the packaging to be closable, constructed to contain all contents and prevent leakage of fluids, labeled, and closed prior to removal. Red bags shall be used for the packaging of all regulated medical waste except as provided in subdivision 2 of this subsection.

2. Sharps shall be placed directly in puncture resistant containers as required by the general industry standards in 16VAC25-90-1910.1030(d)(4)(iii)(A). Sharps containers must not be filled beyond the fill line indicated on the container.

3. Waste packages must not be overfilled. As a bag or container becomes full at the point of generation, and prior to moving, it shall be closed, capped, or sealed so that no waste materials can leak, spill, or protrude during handling, storage, or transport.

4. Once closed, capped, and sealed, bags and containers of regulated medical waste shall not be opened, unsealed, unpackaged, or repackaged. If damage, spills, or outside contamination of the regulated medical waste packaging occurs, the bag or container shall be placed in a secondary packaging that meets all requirements of this subsection.

5. All regulated medical waste packaging shall be labeled. The label shall be securely attached to or printed on packaging. The label may be a tag or sticker securely affixed to the package. Permanent ink shall be used to complete the information on the label. The label and the information provided on the label must be clearly legible. The following information shall be included:

- a. The name, address, and business telephone number of the generator. For hospitals, the label shall identify the specific department or lab where the waste originated;
- b. The words "Regulated Medical Waste," "Biohazard," or "Infectious Waste" in large print; and
- c. The universal biohazard symbol.



E. When regulated medical waste is conveyed in reusable carts or containers, the waste in the cart or container shall be packaged and labeled in accordance with this section.

F. When not being filled and prior to moving, wheeled carts and other items used to move regulated medical waste shall be secured, locked, or sealed so that no waste materials can leak and labeled with the universal biohazard symbol or color-coded red to indicate that the contents contain regulated medical waste.

G. Wheeled carts and roll-off containers shall not be used for the holding of liquids, sharps, animal carcasses or body parts, and human anatomical waste, including tissues, organs, or body parts, unless the regulated medical waste is:

1. Properly contained in rigid containers capable of retaining liquids with enough absorbent material to absorb all liquid present, and

2. Separated from other types of regulated medical waste by a leak-proof rigid barrier, divider, or separate compartment.

H. Prior to transporting regulated medical waste offsite for treatment, transfer, or disposal, waste shall be packaged and labeled for transportation in accordance with the standards of 49 CFR Part 173 of the U.S. Department of Transportation Hazardous Materials Regulations or packaged in accordance with an exemption approved by the U.S. Department of Transportation.

**9VAC20-121-120. Storage of regulated medical waste.**

A. The requirements of this section apply to storage of regulated medical waste, including storage (i) in soiled utility rooms and other accumulation areas; (ii) at a generating facility; (iii) during transportation; (iv) at a regulated medical waste transfer stations; and (v) at a regulated medical waste treatment or disposal facility. This section also applies to areas used to transfer a load of regulated medical waste from one vehicle to another or when a vehicle containing regulated medical waste is parked for 24 hours or more during transportation.

B. All regulated medical waste shall be stored in a manner that:

1. Maintains the integrity of the packaging at all times, prevents damage, leakage, and spills and provides protection from the elements, vectors, and trespassers;

2. Maintains the packaging in an upright and stable configuration to minimize the potential for spills. If packages or containers are stacked, except during transport, the top of the stacked containers must not be more than six feet above the level of the floor. The integrity of the containers must not be compromised by the stacking arrangement;

3. Is clean and orderly and located in areas free of standing liquid and debris;

4. Provides security from unauthorized access and protects workers and the general public. Regulated medical waste shall be stored in areas where access is limited to only those persons specifically designated to manage regulated medical waste;

5. Meets the packaging and labeling requirements of 9VAC20-121-110; and

6. Meets the requirements of 9VAC20-121-130 when regulated medical waste is stored in reusable carts or containers.

C. Regulated medical waste transfer stations, treatment facilities, and generators of 250 gallons or more of regulated medical waste per calendar month are subject to the following storage requirements:

1. All regulated medical waste shall be stored on surfaces that are cleanable and impermeable to liquids. Carpets and floor coverings with cracks or gaps shall not be used in storage areas. Where tile floors are used and seams are present in the tile, the floor must be sealed with wax or other floor coatings in order to meet this requirement.

2. In areas used to store regulated medical waste, all floor drains shall discharge directly to an approved sanitary sewer system, and all ventilation shall discharge so as to minimize human exposure to the waste.

3. Signage shall be displayed to indicate any areas used to store regulated medical waste.

D. All regulated medical waste shall be stored in accordance with the following timeframes:

1. Generators of less than 250 gallons of regulated medical waste per calendar month shall arrange for the removal of all regulated medical waste stored onsite at least once per calendar month and provide shipment to a facility permitted to receive it for transfer, treatment, or disposal. No regulated medical waste shall be stored onsite for more than 45 calendar days, and no more than 250 gallons of regulated medical waste shall be stored onsite at any given time. Records shall be maintained in accordance with 9VAC20-121-100 I.

2. Generators of 250 gallons or more of regulated medical waste per calendar month shall arrange for the removal of all regulated medical waste stored onsite at least once per calendar week and provide shipment to a facility permitted to receive it for transfer, treatment, or disposal. No regulated medical waste shall be stored onsite for more than 10 calendar days. Records shall be maintained in accordance with 9VAC20-121-100 I.

3. Regulated medical waste treatment facilities shall provide treatment or removal of all regulated medical waste stored onsite on at least a weekly basis. No regulated medical waste shall be stored onsite for more than 10 calendar days. Records shall be maintained in accordance with 9VAC20-121-340 [ , as applicable ].

4. Regulated medical waste transfer stations shall store unrefrigerated regulated medical waste onsite for no more than seven calendar days. All regulated medical waste stored for more than seven calendar days must be refrigerated and stored in an ambient temperature between 35°F and

45°F (2°C and 7°C). No regulated medical waste shall be stored onsite for more than a total of 15 calendar days. Records shall be maintained in accordance with 9VAC20-121-340 [ , as applicable ]

5. Regulated medical waste transfer stations and treatment facilities shall clearly demonstrate the length of time that regulated medical waste is accumulated onsite by marking the outer packaging in permanent ink or maintaining an inventory, barcode, [ log, ] or other recordkeeping system.

E. Except in accordance with a permit:

1. No more than 25% of the regulated medical waste stored onsite each month shall be generated or received from offsite, except for emergency cleanups conducted in accordance with 9VAC20-121-300 E 5 and household sharps collected at sharps drop boxes in accordance with 9VAC20-121-300 E 1;

2. Regulated medical waste shall not be treated onsite; and

3. Regulated medical waste that is stored on a loading dock or in areas designated for loading shall be packaged, marked, and labeled for transport and shall not be stored in loading areas for more than 24 hours.

### **9VAC20-121-130. Reusable container requirements.**

A. The requirements of this section shall be implemented whenever regulated medical waste is conveyed in reusable carts or containers.

B. The waste in the cart or container shall be packaged and labeled in accordance with 9VAC20-121-110.

C. Reusable carts and containers must be constructed of smooth, easily cleanable materials that are impervious to liquids and made of materials designed to withstand exposure to hot water or chemical disinfectants. A plastic bag shall not be reused.

D. Use of reusable carts and containers and any automated or mechanical cleaning and disinfection systems shall maintain the integrity of the packaging at all times, prevent damage, leakage, and spills and provide protection from the elements, vectors, and trespassers.

E. Persons cleaning and disinfecting reusable carts and containers shall wear appropriate personal protective equipment.

F. Immediately following each time a container is emptied and prior to being reused, all reusable carts and containers, including reusable suction canisters and fluid carts that receive blood, shall be both thoroughly cleaned and disinfected. Cleaning shall be conducted with detergent and water using an agitation method or by pressure and movement to remove all waste and visible contamination from all inner and outer surfaces of the container. At least one of the following methods shall be used for disinfection:

1. Utilizing an EPA-registered general or broad-spectrum disinfectant following manufacturer's label instructions;

2. Exposure to heated rinse water at a minimum of 180°F (82°C) and a maximum 195°F (90°C) for a minimum of 15 seconds, or until the surface reaches a temperature of 160°F (71°C); or

3. Immersion in or rinsing with, one of the following chemical sanitizers for a minimum of three minutes:

a. Hypochlorite solution (500 ppm available chlorine);

b. Phenolic solution (500 ppm active agent);

c. Iodophor solution (100 ppm available iodine);

d. Quaternary ammonium solution (400 ppm active agent); or

e. Other organic, plant-based, or nonchemical disinfectant registered by EPA.

G. All wash water from cleaning and disinfection shall be contained and discharged directly to an approved sanitary sewer system.

H. Reusable carts and containers shall not be reused if there are cracks, holes, damage, or other defects, including to a lid or locking mechanism or if contamination or waste residuals are present.

I. Reusable carts or containers used for the holding or storage of regulated medical waste shall not be used for any other purpose.

J. When reusable carts or containers containing regulated medical waste are used for offsite transport, all aspects of the cart or container management shall comply with federal Department of Transportation Hazardous Material Regulations, 49 CFR Parts 171 through 180, as applicable.

K. Reusable carts or containers that are damaged, defective, or ready to be discarded shall not be disposed of as solid waste unless they are cleaned and disinfected in accordance with this section, and all regulated medical waste labeling is removed or covered, prior to disposal. Containers unable to be cleaned and disinfected must be treated as regulated medical waste.

**9VAC20-121-140. Management of spills of regulated medical waste.**

A. Any person or facility handling, generating, storing, transporting, transferring, treating, or disposing of regulated medical waste shall immediately address all spills of regulated medical waste, incidents or emergencies, maintenance events, and nonconformances that could have an impact on the management of regulated medical waste at the facility.

B. Anyone handling regulated medical waste shall maintain a spill containment and cleanup kit onsite within the vicinity of any area where regulated medical waste is managed, and the location of the kit shall provide for rapid and efficient cleanup of spills anywhere within the area. All vehicles transporting regulated medical wastes are required to carry a spill containment and clean up kit in the vehicle whenever regulated medical wastes are conveyed. A spill containment and cleanup kit shall consist of at least the following items:

1. Material designed to absorb spilled liquids, and the amount of absorbent material shall be that having a capacity, as rated by the manufacturer, of one gallon of liquid for every cubic foot of regulated medical waste that is normally managed in the area for which the kit is provided or 10 gallons, whichever is less;
2. In a sprayer capable of dispersing its charge in a mist and a stream at a distance, at least one gallon of an EPA-registered hospital grade disinfectant effective against mycobacteria, unless it can be demonstrated that an alternate EPA-registered disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected;
3. Enough red plastic bags to double enclose at least 150% of the maximum load managed (up to a maximum of 500 bags) that meet the applicable requirements of 49 CFR Part 173, including the ASTM 125 pound drop test for filled bags (D959) or an exemption approved by the U.S. Department of Transportation and are accompanied by seals and labels. These bags shall be large enough to overpack any box or container normally used for regulated medical waste management by that generator, handler, or facility;
4. Appropriate personal protective equipment, such as puncture and leak resistant gloves, safety glasses or face shield, protective coveralls or bib, protective footwear, and mask or respiratory protection as needed; and
5. For vehicles only, a first aid kit, fire extinguisher, boundary marking tape, lights, and other appropriate safety equipment.

C. Following any spill or release of regulated medical waste or its discovery, the following procedures shall be implemented:

1. Take appropriate precautions to ensure personnel do not come into contact with any contaminants by wearing appropriate personal protective equipment.
2. Repackage spilled regulated medical waste in accordance with the packaging requirements in 9VAC20-121-110.
3. Transport any regulated medical waste by a transporter that meets the requirements of 9VAC20-121-150.
4. Clean and disinfect all areas and materials having been contacted by regulated medical waste using an EPA-registered hospital grade disinfectant effective against mycobacteria in accordance with manufacturer's label instructions, unless it can be demonstrated that an alternate EPA-registered disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected.
5. Take necessary steps to replenish the spill containment and cleanup kit.

**9VAC20-121-150. Transportation of regulated medical waste.**

A. The requirements of this section apply to the transportation of regulated medical waste including by intermediate transporters and generators who transport their own waste offsite.

B. All transporters of regulated medical waste must comply with the general handling requirements in 9VAC20-121-100.

C. Regulated medical waste shall be transported in accordance with the applicable requirements for shipping papers, packaging, labeling, marking and vehicle placarding in accordance with the U.S. Department of Transportation Hazardous Materials Regulations, 49 CFR Parts 171 through 180. No person shall transport or receive for transport any regulated medical waste that is not packaged and labeled fully in accordance with the U.S. Department of Transportation Hazardous Materials Regulations. Reusable carts or containers used to transport regulated medical waste shall meet the requirements of the U.S. Department of Transportation Hazardous Materials Regulations and must be sealed, puncture resistant, and leak proof.

D. Transportation of regulated medical waste shall maintain the packaging in an upright and stable configuration to minimize the potential for spills. The integrity of the containers must not be compromised by the stacking arrangement.

E. All vehicles and equipment used in the transportation of regulated medical waste must have access control that limits access to those persons specifically designated to manage regulated medical waste, and the cargo carrying body must be secured except when loading and unloading.

F. Surfaces of vehicles and equipment used to transport regulated medical waste must be clean and impermeable to liquids if those areas are involved with the management of the waste. Carpets and floor coverings with cracks or gaps shall not be used. Vehicles used to transport regulated medical waste shall be clean and maintained in an orderly condition, free of standing liquid and debris, in those areas involved with the management of the waste.

G. Storage, transport, and transfer to, from, and between vehicles and equipment shall be under a cover or packaged in a container that protects the waste from the elements and over a floor or bermed pavement that will contain leaks and spills of liquid from the waste. All effluent, wash water, and other runoff shall discharge directly to or through a holding tank to an approved sanitary sewer system. A cover, floor, or pavement is not required if the activity is transient in nature, such as in the case of spill cleanup or collection of waste packages from professional offices for transport.

H. All vehicles transporting regulated medical waste must carry a spill containment and cleanup kit in the vehicle as specified in 9VAC20-121-140 B, whenever regulated medical wastes are conveyed. Following a spill of regulated medical waste or its discovery, the procedures specified in 9VAC20-121-140 C shall be implemented.

I. Any vehicle parked 24 hours or more during transport will be considered a regulated medical waste transfer station subject to the requirements of Part IV (9VAC20-121-200 et seq.) of this chapter. Unless exempt under 9VAC20-121-300 E, no storage during transport will be allowed without a permit issued in accordance with the procedures in Part V (9VAC20-121-300 et seq.) of this chapter.

J. All vehicles and equipment used to transport regulated medical waste must be thoroughly cleaned and disinfected before being used for any other purpose and prior to any transfer of ownership. Disinfection shall include using an EPA-registered hospital grade disinfectant effective against mycobacteria in accordance with manufacturer's label instructions, unless it can be demonstrated that an alternate EPA-registered disinfectant is protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected. Any areas of vehicles or equipment that are visibly contaminated, or that become contaminated as a result of a spill, must be immediately decontaminated in accordance with 9VAC20-121-140.

K. Transport of regulated medical waste by the United States Postal Services that fully complies with 39 CFR 111 shall be considered to be transportation in compliance with this chapter if:

1. The generator maintains a complete and legible copy of the manifest or mail disposal service shipping record for a period of three years. Disposer's certification and other tracking items must be completed and shown on the copy;
2. The addressee is a facility permitted by all the appropriate agencies of the Commonwealth or the host state; and
3. No package shall be more than 35 pounds by weight.

L. Category A waste shall be managed in accordance with the requirements of 9VAC20-121-160.

#### **9VAC20-121-160. Management of Category A waste.**

A. Category A waste shall be managed in accordance with the requirements of this section.

B. Overarching Planning Considerations and Waste Generator Information and Responsibilities for Category A waste are specified in Sections 3 and 5 of Managing Solid Waste Contaminated with a Category A Infectious Substance. In addition to the general management requirements for regulated medical waste in Part III (9VAC20-121-100 et seq.), all Category A waste shall be handled in accordance with the following additional requirements:

1. Every effort shall be made to minimize the amount of Category A waste generated. Category A waste shall be physically separated, if practical, from other types of waste at the point of origin. When other types of regulated medical waste are mixed with Category A waste, the mixture shall be managed as Category A waste. Category A wastes not suitable for conventional treatment methods, such as batteries, electronics, and oxygen cylinders, shall be segregated from other waste at the point of generation for special handling.
2. All handling, storage, transfer, and treatment of Category A waste must be conducted in areas with cleanable and impermeable surfaces. Carpets and floor coverings with cracks or gaps shall not be used. Where tile floors are used and seams are present in the tile, the floor must be sealed with wax or other floor coatings in order to meet this requirement.

3. Equipment and handling techniques that could potentially cause bioaerosols, such as cart tipping, slides, conveyors, and mechanical cleaning or disinfection systems, shall not be used for Category A waste unless the movement and impact is controlled to maintain the integrity of the packaging, prevent exposure to the waste, and any aerosol, bioaerosol, or mist caused by the process is collected and treated or filtered.

4. Category A waste shall not be conveyed in reusable carts or containers unless the containers are subsequently cleaned and disinfected in accordance with 9VAC20-121-130 using an EPA-registered disinfectant appropriate for the type of Category A waste managed and materials being disinfected.

5. All spills of Category A waste shall be cleaned and disinfected in accordance with 9VAC20-121-140 using an EPA-registered disinfectant appropriate for the type of Category A waste managed and materials being disinfected.

6. Category A waste shall be stored in accordance with the requirements of 9VAC20-121-120 B and C. Packages or containers of Category A waste shall not be stacked.

7. A generator storing 250 gallons or more of Category A waste shall notify the department within 24 hours of exceeding 250 gallons. At least once per calendar week, accumulated Category A waste shall be treated onsite in accordance with this section or shipped offsite to a facility permitted to receive it for treatment or disposal. No Category A waste shall be stored onsite for more than 10 calendar days unless an extended storage timeframe is approved by the department. Records shall be maintained in accordance with 9VAC20-121-100 I.

8. The regulated medical waste transfer station or treatment facility shall notify DEQ of receipt of any Category A waste in accordance with 9VAC20-121-340.

C. Waste Transporter Information and Responsibilities for Category A waste are specified in Section 6 of Managing Solid Waste Contaminated with a Category A Infectious Substance. Packaging and labeling of Category A waste for transport must comply with the more stringent packaging standards of 49 CFR Parts 171 through 180 of the HMR, or may require a DOT special permit for an exception to the HMR requirements to allow for alternative packaging to accommodate the waste.

D. Waste Treatment Information and Responsibilities for Category A waste are specified in Section 7 of Managing Solid Waste Contaminated with a Category A Infectious Substance. In addition to the general treatment requirements for regulated medical waste in Part IV (9VAC20-121-200 et seq.), all Category A waste shall be treated in accordance with the following additional requirements:

1. A facility shall only receive Category A waste for processing or treatment upon specific approval from the director or by specific provisions within the facility's permit.

2. Prior to treatment of any Category A waste, the facility shall notify DEQ and conduct additional validation testing in accordance with 9VAC20-121-260 and an approved treatment plan that is specific to the Category A waste stream and packaging types that will be received.

3. The treatment method and operating parameters shall be appropriate and effective for the type of Category A waste being managed. Treatment units that employ a mechanical process, such as grinding or shredding, prior to treatment or integral to the treatment unit, may not be appropriate for Category A waste streams. The facility shall demonstrate that the process prevents employee exposure to the waste; contains any aerosol, bioaerosol, or mist caused by the process; and treats or filters any air evacuated from the chamber during processing.

4. The facility shall not receive or treat Category A waste until the department has reviewed and approved the validation results, operating parameters, and protocols to be used for the treatment unit.

5. Treatment of Category A waste shall only be in accordance with the operating parameters and protocols approved by the department.

6. Challenge testing shall be performed and documented for every load containing Category A waste. The facility may request an alternate challenge test frequency once a high level of confidence is established that the Category A waste is being effectively treated.

7. The owner or operator shall provide a certification that the regulated medical waste management plan demonstrates protocols specific to the Category A waste stream to be treated and meets all additional standards of Part III (9VAC20-121-100 et seq.) and Part IV (9VAC20-121-200 et seq.), as applicable, in accordance with 9VAC20-121-330. The plan shall specify if and how management protocols for Category A waste differ from existing protocols for routinely received regulated medical waste, including how treated wastes will be disposed. The certification shall also include a statement that the emergency contingency plan has been provided to the local police and fire departments, local emergency manager, and local emergency health coordinator.

E. Final Disposal Information and Responsibilities for Category A waste are specified in Section 8 of Managing Solid Waste Contaminated with a Category A Infectious Substance. Category A waste shall be

disposed of in accordance with the following requirements:

1. Category A waste that has been treated in accordance with the special requirements of this section is no longer Category A waste or regulated medical waste. Category A waste treated in accordance with this section is solid waste and shall be disposed of at a permitted solid waste disposal facility, provided the disposal is in accordance with the Solid Waste Management Regulations (9VAC20-81) and the facility's permit.
2. Category A waste not treated in accordance with this chapter shall not be transported to, received for transport, or disposal by, or disposed of in, any solid waste management facility.

## Part IV

### Standards for Regulated Medical Waste Transfer Stations and Treatment Facilities

#### **9VAC20-121-200. General and applicability.**

A. Any person who designs, constructs, or operates any regulated medical waste transfer station or treatment facility not otherwise exempt under 9VAC20-121-300 E shall obtain a permit-by-rule pursuant to this chapter prior to operation and comply with the requirements of this part. Further, all applications pursuant to this chapter shall demonstrate specific means proposed for compliance with requirements set forth in this part.

B. All facilities, except exempted facilities, shall be maintained and operated in accordance with the permit-by-rule status pursuant to this chapter. All facilities shall be maintained and operated in accordance with the approved design and intended use of the facility.

C. Hazardous wastes shall not be managed or disposed in facilities subject to this regulation unless specifically authorized by the facility permit or the director and managed in accordance with 9VAC20-60. Any material from a state other than Virginia that is classified as a hazardous waste in that state shall be managed as hazardous waste in accordance with 9VAC20-60.

#### **9VAC20-121-210. Siting requirements.**

A. The siting of all regulated medical waste transfer stations or treatment facilities shall be governed by the standards as set forth in this section. These facilities shall:

1. Be adjacent to or have direct access to roads that are paved or surfaced and capable of withstanding anticipated load limits;
2. Not be sited or constructed in areas subject to base floods;
3. Shall not be closer than:
  - a. 50 feet to any property boundary;
  - b. 50 feet to any perennial stream or river;
  - c. 200 feet to any residence or recreational park area; or
  - d. 200 feet to any health care facility, school, or similar type public institution, unless the facility is located at the health care facility, school, or similar type public institution.

B. The site of a regulated medical waste transfer station or treatment facility shall provide room to minimize traffic congestion and allow for safe management of regulated medical waste and safe operation of the facility.

#### **9VAC20-121-220. Design and construction requirements.**

A. The design and construction of all regulated medical waste transfer stations or treatment facilities shall be governed by the standards as set forth in this section. These facilities shall have:

1. An access road suitable for loaded collection vehicles in all weather conditions from the entrance to the unloading or receiving area of the facility.
2. Onsite queuing capacity for the expected traffic so that the waiting collection vehicles do not back up onto the public road.
3. Unloading and loading areas of an adequate size and design to facilitate efficient transfer of regulated medical waste to and from collection vehicles and the unobstructed movement of vehicles.
4. Access controls such as perimeter security fencing, gates, locks, badge systems, or other controls to limit access to areas used to store, transfer, or treat regulated medical waste to only those persons specifically designated to manage regulated medical waste.
5. Adequate lighting so that operating personnel can exercise site control. Lighting may be provided by portable equipment as necessary.

6. Covered areas with cleanable and impermeable surfaces for handling, storage, transfer, and treatment of regulated medical waste and the cleaning and disinfection of reusable containers. These areas shall not be carpeted or have floor coverings with cracks or gaps. Where tile floors are used and seams are present in the tile, the floor must be sealed with wax or other floor coatings in order to meet this requirement.

7. Bermed pavement, a liquid retaining lip, or equivalent controls at loading docks and near rolling or bay doors to contain potential leaks and spills of regulated medical waste or other liquids.

8. Floors sloped or graded to drain such that all effluent, wash water, and other runoff from storage and processing areas, treatment equipment, waste compactors, and reusable container cleaning and disinfection areas is contained and discharged directly to an approved sanitary sewer system.

9. Ventilation that discharges to minimize human exposure to the waste.

10. A water supply shall be provided for cleaning purposes.

11. Fire alarm and protection systems capable of detecting, controlling, and extinguishing any and all fires.

12. Fixed radiation detectors in a location as close as practicable to the incoming waste loads and in an appropriate geometry to monitor all waste prior to storage, transfer, or treatment. A fixed radiation detector is not required at captive regulated medical waste management facility if the facility demonstrates that there is no potential for generation or management of radioactive materials or wastes. Demonstration shall include a certification that there is no radiation producing equipment or material onsite.

B. Effluent, wash water, and other runoff from the facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES permit issued pursuant to 9VAC25-31.

C. Slides, cart tippers, conveyors, and similar equipment used to move regulated medical waste must be designed and constructed such that the movement and impact is controlled to maintain the integrity of the packaging at all times and prevent damage, leakage, and spills. Trash chutes shall not be used to manage regulated medical waste.

D. Any areas used for the storage of regulated medical waste shall be designed in accordance with 9VAC20-121-120 and have sufficient storage capacity for the maximum anticipated storage amount based on the amount of daily incoming waste and maximum length of time in storage.

E. All facilities that manage reusable containers or carts for regulated medical waste shall have designated areas for manual or mechanical cleaning and disinfection that comply with the requirements of 9VAC20-121-130.

#### **9VAC20-121-230. Operation requirements.**

A. The operation of regulated medical waste transfer stations or treatment facilities shall be governed by the standards as set forth in this section.

B. The regulated medical waste transfer station or treatment facility shall maintain and operate in accordance with a regulated medical waste management plan that meets all requirements of 9VAC20-121-330. This plan shall be reviewed and recertified annually, within one year from the date of the last certification, to ensure consistency with current operations and regulatory requirements, and shall be made available for review by the department upon request. If the applicable standards of this chapter and the facility's operations plan conflict, this chapter shall take precedence.

C. The facility must operate to comply with the general handling requirements of 9VAC20-121-100.

D. All regulated medical waste shall be packaged, labeled in accordance with 9VAC20-121-110 and managed in accordance with the storage conditions and timeframes required by 9VAC20-121-120. The facility shall employ methods to track and document specific incoming waste throughout the duration of storage, treatment or transfer, and shipment offsite.

E. All facilities that manage reusable carts or containers for regulated medical waste shall comply with the requirements of 9VAC20-121-130 and maintain onsite an adequate water supply and sufficient quantity of detergent and EPA-registered disinfectant or other approved materials, as applicable.

F. Except for reusable containers authorized by the department to be opened, regulated medical waste containers must not be opened or unpackaged unless approved as part of the consolidation or treatment process.

G. The facility shall immediately address all spills of regulated medical waste, incidents or emergencies, maintenance events, and nonconformances that could have an impact on the management of regulated medical waste. Spill containment and cleanup kits shall be maintained as required by 9VAC20-121-140 B, and immediately following a spill of regulated medical waste or its discovery, the procedures specified in 9VAC20-121-140 C shall be implemented.

H. Damaged or leaking packages of regulated medical waste shall either be properly repackaged prior

to storage and subsequent shipment offsite or contained and treated onsite within 24 hours if the facility is permitted for treatment operations.

I. Transportation of regulated medical waste is subject to the requirements of 9VAC20-121-150.

J. Waste must not be accepted unless it is allowed in accordance with the permit-by-rule issued and the regulated medical waste management plan and there is sufficient storage, transfer, or treatment capacity. The amount of regulated medical waste received and stored at the facility shall not exceed the permit process rate and designed storage capacity.

K. Regulated medical waste transfer stations and treatment facilities regulated under this part shall implement an unauthorized waste control program in accordance with their written plan as required by 9VAC20-121-330 and the following provisions:

1. Prior to managing regulated medical waste or using process equipment, and at least annually, within one year from the date of the last training, the facility shall provide training to staff to recognize, segregate, properly manage, document, and report receipt of waste not authorized to be managed by the facility's permit.

2. If unauthorized waste is observed in the waste delivered to the facility prior to unloading, the owner or operator must refuse to accept the waste.

3. If the unauthorized waste is observed in the waste at the facility or delivered to the facility, the owner or operator shall segregate it, notify the generator (if applicable), document the incident in the operating record, make necessary arrangements to have the material managed in accordance with applicable federal and state laws, and notify the department of the incident to include the means of proper handling, in accordance with the reporting procedures of 9VAC20-121-340.

4. Any unauthorized waste accepted by the owner or operator shall be managed in accordance with applicable federal or state laws and regulations. The facility must carefully store the waste in a designated storage area within the facility separate from untreated regulated medical waste and treated regulated medical waste. Unauthorized waste that has been segregated and stored shall be adequately secured and contained to prevent leakage or contamination to the environment. The facility shall have the unauthorized waste removed or properly managed [ ~~as soon as practicable, but~~ ] no later than 10 calendar days after discovery [ ~~or unless~~ ] an alternate timeframe [ ~~as up to 30 days is~~ ] approved by the department [ ~~for certain waste types~~ ]. Handling and management of the unauthorized waste, including segregation, removal, and transportation, shall be by a person authorized to manage such waste and shall be transferred, treated, or disposed of at a permitted waste management facility approved to receive it.

5. The facility must maintain a record of all unauthorized waste accepted at the facility, the date accepted, the type of waste, date of transfer, treatment, or disposal, management method, and the name, address, and telephone number of the final treatment or disposal facility.

L. Radiation detection equipment shall be operated and maintained in a manner that ensures all incoming waste is screened and the measurements are meaningful and fulfill the objectives for detecting radiologically contaminated waste. If fixed radiation detectors become inoperable, repairs shall be made as soon as practicable, and appropriate portable equipment shall be used to screen incoming waste loads until the equipment is repaired.

M. Untreated waste, radioactive waste, hazardous waste, and any unauthorized waste must be segregated and stored in clearly identified containers. Category A waste shall be managed in accordance with the requirements of 9VAC20-121-160.

N. The facility shall be operated to maintain the design and construction standards as required by 9VAC20-121-220.

O. All areas used to transfer or treat regulated medical waste shall have prominent signage or markings displayed on the door or access point to indicate that the space is used to manage regulated medical waste, and those areas shall be secured to prevent unauthorized access.

P. Floors and areas used for the handling, tipping, storage, transfer, or treatment of regulated medical waste and reusable container cleaning must be kept clean, in an orderly condition, and free of standing liquid and debris.

Q. Effluent, wash water, and other runoff from facility floors, storage and processing areas, treatment equipment, waste compactors, and reusable container cleaning and disinfection areas shall be contained and discharged directly to an approved sanitary sewer system. Effluent, wash water, and other runoff from the facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES permit issued pursuant to 9VAC25-31.

R. All infrastructure and equipment shall be properly maintained and operated as designed and approved in the facility's permit. Facility maintenance must include annual calibrations of parametric controls, including recording devices and temperature and pressure gauges; overall cleaning (the facility,

vehicles, and processing systems); servicing of exhaust lines and drains; ensuring the proper functioning of pressure and safety valves, and water, steam, disinfectant and electrical lines; replacing gaskets as needed to ensure a complete seal at all times; ensuring floor drains are maintained such that liquid is free-draining at all times; and maintaining proper functioning of mechanical waste handling systems, conveyors and shredders, HEPA, and other ventilation and filtration devices, and radiation monitoring devices, as applicable.

S. Adequate numbers and types of properly maintained equipment shall be available for operation. Provision shall be made for substitute equipment to be available, except for treatment units which must be approved by the department, or the emergency contingency plan implemented to achieve compliance with this chapter, as applicable, within 24 hours should the former become inoperable or unavailable. Operators with training appropriate to the tasks they are expected to perform and in sufficient numbers for the complexity of the site shall be on the site whenever it is in operation.

T. Safety hazards to operating personnel shall be controlled through an active safety program consistent with the requirements of 29 CFR Part 1910, as amended.

U. Each facility shall conduct monthly inspections of all major aspects of facility operations necessary to ensure compliance with the requirements of this chapter. Records of these inspections must be maintained in the operating record and available for review in accordance with 9VAC20-121-340. If a deficiency or release is identified during an inspection, the owner or operator must document it on the self-inspection checklist, provide a remedy for the issue as soon as feasible, and document repairs and remedial actions, including the date implemented. The following aspects of the facility shall be inspected on a monthly basis whenever the facility is in operation:

1. Each component of the processing equipment, treatment system, and infrastructure;
2. Spill containment and cleanup kit and any other decontamination materials;
3. Safety and emergency equipment, including radiation detection equipment, fire alarm and protection systems, fire extinguishers, eyewash stations, or other equipment;
4. Waste storage areas and loading and unloading areas;
5. All floors and floor drains and any areas and inventory for managing, cleaning, and disinfecting reusable carts or containers;
6. Proper use of personal protective equipment by all employees;
7. Monitoring for pests and vermin, litter, blowing debris, odor, dust, breached containers, and spills; and
8. Any areas in which significant adverse environmental or health consequences may result if breakdown occurs.

V. Prior to managing regulated medical waste or using process equipment, and at least annually, within one year from the date of the last training, the facility shall provide all operators with training on the procedures for managing regulated medical waste specific to the transfer or treatment process used, including:

1. General handling of regulated medical waste and use of personal protective equipment;
2. Packaging, labeling, and storage of regulated medical waste;
3. Cleaning and disinfection of reusable containers;
4. Facility housekeeping and management of spills;
5. Overall process and mechanical operation of any equipment used [ ~~including operation of any treatment units and procedures for conducting periodic challenge testing; and~~ ; ]
6. Emergency contingency plan procedures, in case of system failure or other emergency [ ; and
7. In addition to the requirements of subdivisions 1 through 6 of this subsection, treatment facility operators shall be trained on the operation of any treatment units and procedures for conducting periodic challenge testing ] .

W. The facility shall retain records in accordance with 9VAC20-121-340. Records shall be retained for three years and available for review as requested by the department.

#### **9VAC20-121-240. Treatment standards.**

A. Prior to disposal or recycling, all regulated medical waste, including its packaging, must be treated by a department approved regulated medical waste treatment process. Any method used for the treatment of regulated medical waste must be verifiable to render the waste noninfectious in a manner that is protective of human health and the environment. Untreated regulated medical waste shall not be recycled or disposed of in a solid waste landfill or other solid waste management facility.

B. The requirements in this subsection are applicable to all treatment methods. Additional requirements are provided in subsections C through I of this section and are dependent on the type of treatment used.

1. The treatment method and operating parameters shall be appropriate and effective for the type of waste being managed.
  - a. Human pathological and anatomical waste, including tissues, organs, body parts, and other related waste and animal carcasses shall [ not ] be treated by [ an incineration process ] unless [ an alternative treatment process is ] approved by the department. Alkaline hydrolysis is an alternative treatment process that may be considered for treatment. Pathological waste in a liquid fixative may require special management, such as decanting the liquid for separate disposal, incineration, or management as hazardous waste if applicable.
  - b. Thermally resistant waste, including solidified liquids and bulk animal bedding, requires approval of treatment operating parameters on a case-by-case basis.
  - c. Category A waste shall be managed in accordance with the requirements of 9VAC20-121-160.
  - d. Waste contaminated with toxins and toxin waste solutions (depending on the toxin) can be inactivated by incineration or extensive autoclaving, or by soaking in suitable decontamination solutions. Toxin inactivation procedures shall not be assumed to be 100% effective without validation using specific toxin bioassays.
2. Treatment equipment shall include built-in automatic controls and fail safe mechanisms to ensure the waste cannot bypass the treatment process.
3. Size reduction, grinding, shredding, or puncturing of containers is permissible if integral to the treatment unit and shall be done with safe and sanitary methods. Nothing in this section shall prevent the use of devices that grind, shred, or compact to reduce volume at the point of generation and prior to enclosing the regulated medical waste in plastic bags and other required packaging; however, the waste remains regulated medical waste. The facility shall demonstrate that devices are constructed and operated in a manner that prevents employee exposure to the waste; contains any aerosol, bioaerosol, or mist caused by the process; and treats or filters any air evacuated from the chamber during processing. Appropriate means must be employed to appropriately protect workers and contain the waste when unloading regulated medical wastes from such a device.
4. If grinding, shredding, or size reduction or puncturing of packaging takes place prior to treatment, it shall occur in a closed unit immediately preceding the treatment unit. If grinding, shredding, or size reduction takes place following treatment, it must occur within 24 hours of leaving the treatment unit. Transfer from a grinder or shredder to or from a treatment unit shall be under forced draft ventilation that removes fumes from the operations area to a safe discharge.
5. All process units for the preparation or treatment of regulated medical waste shall be in closed vessels designed to operate under a negative pressure atmospheric control that filters all vents, discharges, and fugitive emissions of air from the process units through a high efficiency particulate air (HEPA) filter with efficiency of 99.97% for 0.3 microns. Proper installation of filters shall be documented. Air and gases which have themselves been sterilized by the process are not required to pass through a filter.
6. All effluent must be discharged to an approved sanitary sewer system. Effluent from the facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES permit issued pursuant to 9VAC25-31.
7. Only the types of regulated medical waste specified in the facility's permit shall be treated using the approved treatment unit. Treatment methods include:
  - a. Autoclaves (steam sterilization);
  - b. Microwaves;
  - c. Dry heat treatment;
  - d. Chemical treatment;
  - e. Alkaline hydrolysis;
  - f. Incineration; and
  - g. Alternate treatment technologies as reviewed and approved by the department in accordance with this chapter.
8. Prior to operation of any treatment unit, the facility must conduct validation testing in accordance with 9VAC20-121-260 and an approved treatment plan to establish the appropriate operating parameters for effective treatment of regulated medical waste. The results of the testing must be submitted to the department for review and approval in accordance with 9VAC20-121-320. The facility shall not receive or treat regulated medical waste until the department has approved the validation results, operating parameters, and protocols to be used for the treatment unit. Revalidation shall be conducted as required by 9VAC20-121-260.
9. Treatment units shall operate in accordance with the specified operating parameters and

protocols set forth in subsections C through I of this section or alternate standards established through validation testing and approved by the department. Records of treatment shall be maintained in accordance with 9VAC20-121-340.

10. Periodic challenge testing shall be performed under full loading in accordance with 9VAC20-121-270 to evaluate the effectiveness of each treatment unit and treatment method.

11. Effective treatment of regulated medical waste must achieve a 6 log<sub>10</sub> or greater reduction of the viable spore concentrations of the most appropriate bacterial species for the treatment method. Effective treatment is demonstrated by no growth in all treated biological indicators and growth in all untreated biological indicators during validation and periodic challenge testing.

12. The selection of the most appropriate biological indicator to utilize during validation and challenge testing of a treatment process shall be supported by referenced standards, guidelines, or information from peer reviewed journals related to the process.

a. Biological indicators shall utilize spores from one of the following bacterial species:

(1) Geobacillus stearothermophilus (G.s.);

(2) Bacillus atrophaeus (B.a.);

(3) Bacillus subtilis (B.s.);

(4) Other Bacillus species or spore forming bacteria from domestic or international culture collections; or

(5) Organisms that demonstrate the necessary resistance for the treatment method, as approved by the department.

b. The facility shall use commercially prepared biological indicators, such as spore strips, spore suspensions, and self-contained biological indicators.

c. Biological indicators shall be placed in the most challenging location during validation and periodic challenge testing. Indicator ports, chambers, or other mechanisms shall be used for placement of the biological indicator when placement directly into the waste may be compromised by the treatment method, such as when shredding, grinding, or other mechanism is used. Ports and chambers shall be accessible by the operator.

d. When using the appropriate biological indicator, the number to be used shall be based upon the amount of waste to be processed in accordance with 9VAC20-121-260 D 7 (for validation) and 9VAC20-121-270 B (for periodic challenge testing).

13. Parametric controls shall be used to monitor critical operational treatment parameters and provide a record of measurements that can be correlated to effective treatment.

14. Door alignment, gaskets, locking mechanisms, and other components of any treatment unit that utilizes a pressure vessel (such as an autoclave) shall achieve a complete seal during operation to prevent leaking of steam, liquid, or waste and avoid decreases in pressure or temperature that could cause isolated cold spots inside the unit.

15. In the event of power failure, interrupted, or incomplete treatment cycle, the facility shall investigate the cause of the failure and make any necessary repairs to resolve the issue prior to the next treatment cycle. Any waste in the treatment unit shall either be removed and managed as regulated medical waste or subjected to another full treatment cycle once repairs are made.

16. [~~Reusable treatment carts and containers (such as autoclave carts) shall be clean and free of treated waste residuals before reuse. After each cycle, treated waste shall be removed from reusable treatment carts and containers. All reusable treatment carts and containers shall be cleaned on a periodic basis to remove the buildup of more than de minimus amounts of treated waste residual on cart and container surfaces.~~]

C. The requirements in this subsection are applicable to autoclave treatment methods.

1. [~~All autoclaves shall be operated at 100% saturated steam conditions at a minimum operating temperature of 250°F (121°C) at no less than 15 pounds per square inch of gauge pressure. Autoclaves shall maintain the minimum operating temperature and pressure for an uninterrupted cycle of 90 minutes. Alternate combinations of operating temperatures, pressures, and cycle times may be demonstrated through validation testing to achieve a reliable and complete kill of all microorganisms in regulated medical waste at design capacity. Longer steam sterilization times are required when a load contains a large quantity of liquid. All autoclaves shall be operated at 100% saturated steam conditions at appropriate combinations of operating temperatures, pressures, and residence times, that have been demonstrated through validation testing to achieve reliable and effective treatment of microorganisms in regulated medical waste at design capacity. Longer treatment cycles may be needed for loads with liquids. Autoclave operating temperatures shall be greater than or equal to 250°F (121°C) at no less than 15 pounds per square inch of gauge pressure, and the minimum operating temperature and pressure shall be maintained during the~~]

residence time of the treatment cycle. ]

2. All autoclaves shall be equipped with continuous time, temperature, and pressure monitoring and recording.

3. ~~[ For vacuum autoclaves, pre-vacuum cycles shall be conducted such that all system air is fully evacuated a minimum of three times at the beginning of each treatment cycle and held with all air evacuated to ensure adequate steam exposure throughout the waste. For vacuum autoclaves, a pre-vacuum shall be conducted such that all system air is fully evacuated a minimum of two times prior to the residence phase of the treatment cycle, during which all air is evacuated to ensure adequate steam exposure throughout the waste. Additional pre-vacuum pulls may be required based on certain waste or packaging types, and as determined through validation testing. ]~~

4. For gravity autoclaves, pressure pulsing must be performed to evacuate all air in the unit.

5. Validation and periodic challenge testing shall be performed using biological indicators utilizing spores from the bacterial species *Geobacillus stearothermophilus*.

D. The requirements in this subsection are applicable to microwave treatment methods.

1. Microwaving treatment shall incorporate pretreatment by shredding and steam injection or induction.

2. All microwaves shall be operated between 203°F and 212°F (95°C and 100°C) for a minimum of 45 minutes. Alternate operating temperatures and cycle times may be demonstrated through validation testing.

3. Microwave radiation power of the treatment process shall be at least six units each having a power of 1,200 watts or the equivalent power output.

4. Each microwave treatment unit shall be equipped to sense, display, and continuously record the temperature at the start, middle, and end of the treatment chamber.

5. Process temperatures at the exposure chamber entry and exit and the waste flow rate shall be continuously monitored, displayed, and recorded.

6. Validation and periodic challenge testing shall be performed using biological indicators utilizing spores from the bacterial species *Bacillus atrophaeus*.

E. The requirements in this subsection are applicable to dry heat treatment methods.

1. Dry heat systems shall be operated per the following operational standards:

- a. Temperature of not less than 320°F (160°C) for 120 minutes;
- b. Temperature of not less than 340°F (170°C) for 60 minutes; or
- c. Temperature of not less than 360°F (180°C) for 30 minutes.

Alternate operating temperatures and cycle times may be demonstrated through validation testing.

2. Each treatment unit shall be equipped to sense, display, and continuously record the temperature of the treatment chamber.

3. Unless otherwise approved by the department, no treatment unit employing dry heat as the main treatment process shall have a treatment chamber capacity greater than 1.0 cubic foot in volume.

4. Validation and periodic challenge testing shall be performed using biological indicators utilizing spores from the bacterial species *Bacillus atrophaeus*.

F. The requirements in this subsection are applicable to chemical treatment methods.

1. Operating standards for chemical treatment systems are dependent on the chemical concentration and exposure time. Facilities wishing to employ a chemical treatment system shall submit an alternate treatment technology petition per 9VAC20-121-250 to justify the proposed operating parameters. Once the petition is approved, chemical concentration and treatment time operating parameters shall be demonstrated through validation testing in the presence of the maximum anticipated organic waste content.

2. The facility shall maintain registration for the chemical used in the treatment system in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act, if required.

3. Containers holding chemicals shall be labeled in accordance with 40 CFR 156 (Labeling Requirements for Pesticides and Devices), and the facility shall maintain Safety Data Sheets for all chemicals related to the chemical treatment system.

4. Validation and periodic challenge testing shall be performed using biological indicators utilizing spores from the bacterial species *Bacillus subtilis* or *Bacillus atrophaeus*.

G. The requirements in this subsection are applicable to alkaline hydrolysis treatment methods. Alkaline hydrolysis is a process by which heat and pressure dissolve and sterilize regulated medical waste in a strong solution of sodium or potassium hydroxide (NaOH or KOH, respectively).

1. Alkaline hydrolysis shall only be used for treatment of human pathological and anatomical waste.

including tissues, organs, body parts, other related waste, and animal carcasses.

2. Systems that operate above atmospheric pressure must employ a dissolution chamber that is a certified pressure vessel by the American Society of Mechanical Engineers' (ASME).

3. Operating parameters for alkaline hydrolysis systems vary depending on the amount of regulated medical waste to be treated and the type of contamination:

a. To inactivate microbial pathogens, the waste must be heated to 212°F (100°C), and pressurized at 15 pounds per square inch for three hours;

b. To destroy transmissible spongiform encephalopathy (TSE), including bovine spongiform encephalopathy, the waste must be heated to 300°F (150°C) and pressurized at 70 pounds per square inch for six to eight hours.

c. Chemical concentration and treatment time shall be demonstrated through validation testing in the presence of the worst case organic material waste content.

4. Treatment shall ensure the complete dissolution of all tissue remains, if applicable, and any solids left shall be disposed of at a solid waste management facility permitted to receive it.

5. Validation and periodic challenge testing shall be performed using biological indicators utilizing spores from the bacterial species *Geobacillus stearothermophilus*.

H. The requirements in this subsection are applicable to incineration treatment methods.

1. All incinerators shall be permitted under regulations of the State Air Pollution Control Board and be in compliance with the regulations of that body.

2. All combustible regulated medical waste shall be converted by the incineration process into ash that is not recognizable as to its former character.

3. Analysis of ash and air pollution control residues:

a. Incinerator bottom ash and residues collected from air pollution control equipment shall be collected separately in leak resistant containers with runoff controls to prevent releases from the ash storage. Incinerator bottom ash and air pollution control residues shall be stored separately until sample testing per subdivision 3 b of this subsection is performed and the waste streams are determined to be a solid waste.

b. Testing requirements:

(1) Representative samples consisting of 250 milliliters of each waste stream shall be collected once every eight hours of operation of a continuously fed incinerator and once every batch or 24 hours of operation of a batch fed incinerator. Samples shall be collected during each 1,000 hours of operation or quarterly, whichever is more often, and samples shall be thoroughly mixed and seven random portions of equal volume shall be composited into one sample for laboratory analysis. This sample shall be tested in accordance with the methods established by the Virginia Hazardous Waste Management Regulations (9VAC20-60) for determining if a solid waste is a hazardous waste.

(2) In addition to subdivision 3 b (1) of this subsection, composite samples of incinerator bottom ash shall be tested for total organic content.

c. If ash or air pollution control residues are found to be hazardous waste (based on a sample and a confirmation sample) the waste ash shall be managed of as a hazardous waste in accord with the Virginia Hazardous Waste Management Regulations (9VAC20-60). The operator shall notify the department within 24 hours. No later than 15 calendar days following, the permittee shall submit a plan for treating and disposing of the waste on hand at the facility and all unsatisfactorily treated waste that has left the facility. The permittee shall include with the plan a description of the corrective actions to be taken to prevent further unsatisfactory performance. No ash or air pollution control residues subsequently generated from the incinerator waste stream found to be hazardous waste shall be sent to a nonhazardous solid waste management facility in the Commonwealth unless written approval of the director is obtained in accordance with Solid Waste Management Regulations (9VAC20-81).

d. If ash or air pollution control residues are found not to be hazardous waste by analysis, they may be disposed of in a solid waste landfill that is permitted to receive municipal solid waste or incinerator ash, provided the disposal is in accordance with the Solid Waste Management Regulations (9VAC20-81).

e. A log shall document the ash sampling, to include the date and time of each sample collected; the date, time, and identification number of each composite sample; and the results of the analyses, including laboratory identification. Results of analyses must be returned from the laboratory and recorded within four weeks following collection of the composite sample. The results and records described in this part shall be maintained for a period of three years, and shall be available for review.

I. Alternate treatment technologies as reviewed and approved by the department. All alternate treatment technologies approved by the director shall conform to the general treatment standards in subsection B of this section and any additional requirements the department imposes at the time of approval.

1. Any person who desires to use a chemical treatment technology per subsection F of this section or treatment technology, other than those described in subsections C, D, and E or subsections G and H of this section, shall petition the director for a review under 9VAC20-121-250.

2. If the director finds that the technology and application is in accordance with this part, the department may consider the facility for permitting.

### **9VAC20-121-250. Alternate treatment technologies.**

A. In accordance with 9VAC20-121-240 I, chemical treatment and other alternate treatment technologies may be approved for permitting if the department reviews the process and determines that the technology provides treatment in accordance with this chapter and protects public health and the environment, and if the department establishes appropriate conditions for their siting, design, and operation. This section establishes the criteria, protocols, procedures, and processes to be used to petition the director for review and to demonstrate the suitability of the proposed technology for the treatment of regulated medical waste.

B. Alternate treatment technologies are subject to the general treatment standards of 9VAC20-121-240 and the additional requirements of this section. To ensure effectiveness of the proposed chemical or alternate treatment technology, the applicant must demonstrate effective microbial and bacterial inactivation at a 6 log<sub>10</sub> or greater reduction for the microorganisms and spores listed in subsections C and D of this section through validation testing that meets the requirements of 9VAC20-121-260.

C. Microbial inactivation shall be demonstrated using one or more representative microorganisms from each microbial group:

1. For vegetative bacteria: either Staphylococcus aureus (ATCC 6538) or Pseudomonas aeruginosa (ATCC 15442).

2. For fungi: either Candida albicans (ATCC 18804), Penicillium chrysogenum (ATCC 24791), or Aspergillus niger.

3. For viruses: either Polio 2 or Polio 3, or MS-2 Bacteriophage (ATCC 15597-B1).

4. For parasites: either Cryptosporidium spp. oocysts or Giardia spp. Cysts.

5. For Mycobacteria: either Mycobacterium terrae, Mycobacterium phlei, Mycobacterium bovis (BCG) (ATCC 35743).

D. Bacterial inactivation shall be demonstrated for chemical, thermal, and irradiation treatment systems using spores from either B. stearothermophilus (ATCC 7953) or B. subtilis (ATCC 19659).

E. For those treatment processes that can maintain the integrity of the biological indicator carrier (i.e., ampules, plastic strips) of the desired microbiological test strain, biological indicators of the required strain and concentration shall be used to demonstrate effective treatment. Effective treatment is demonstrated by no growth in all treated biological indicators and growth in all untreated biological indicators during validation and periodic challenge testing.

F. For those treatment mechanisms that cannot ensure or provide integrity of the biological indicator (i.e., chemical inactivation or grinding), quantitative measurement of effective treatment requires a two-step approach: Step 1, "Control"; Step 2, "Test." The purpose of Step 1 is to account for the reduction of test microorganisms due to loss by dilution or physical entrapment.

1. Step 1 is:

a. Use microbial cultures of a predetermined concentration necessary to ensure a sufficient microbial recovery at the end of this step.

b. Add suspension to a standardized medical waste load that is to be processed under normal operating conditions without the addition of the microbial inactivation agent (i.e., heat, chemicals).

c. Collect and wash waste samples after processing to recover the biological indicator organisms in the sample.

d. Plate recovered microorganism suspensions to quantify microbial recovery. (The number of viable microorganisms recovered serves as a baseline quantity for comparison to the number of recovered microorganisms from wastes processed with the microbial inactivation agent).

e. The required number of recovered viable indicator microorganisms from Step 1 must be equal to or greater than the number of microorganisms required to demonstrate a 6 log<sub>10</sub> or greater reduction.

2. Step 2 is:

- a. Use microbial cultures of the same concentration as in Step 1.
- b. Add suspension to the standardized medical waste load that is to be processed under normal operating conditions with the addition of the microbial inactivation agent.
- c. Collect and wash waste samples after processing to recover the biological indicator organisms in the sample.
- d. Plate recovered microorganism suspensions to quantify microbial recovery.

3. From data collected from Step 1 and Step 2, the level of microbial and bacterial inactivation shall be calculated based on the:

- a. Number of viable "Test" microorganisms (in colony forming units per gram of waste solids) introduced into the treatment unit,
- b. Number of "Control" microorganisms (in colony forming units per gram of waste solids) that were not recovered after processing, and
- c. Number of viable "Test" microorganisms (in colony forming units per gram of waste solids) recovered in treated processed waste residue.

G. To initiate the technology review process the applicant shall complete and submit DEQ Form RMWTP-01, Application for Evaluation and Approval of Regulated Medical Waste Treatment Technology to the department. The application shall be accompanied by:

1. A detailed description of the chemical or alternate treatment technology. The description must include:

- a. A discussion of operating procedures and conditions, including, as applicable, treatment times, pressure, temperatures, chemical concentrations, irradiation doses, feed rates, and [ ~~waste load~~ waste load ] composition;
- b. A discussion of parametric controls, verifying effective treatment, and ensuring operator noninterference; and
- c. A discussion of waste residues and by-products generated and methods of disposal or recycling.
- d. The description shall be accompanied by the manufacturer's operations manual or equipment usage instructions, equipment specifications, and maintenance manual.

2. Documentation demonstrating the chemical or alternate treatment technology meets microbial and bacterial inactivation criteria specified under subsections B through F of this section. The documentation must include a description of the test procedures and calculations used in fulfilling required performance standards verifying effective treatment, of user verification methodology, and of microbial culturing protocols that ensure traceability, purity and concentration, and copy of all test results.

3. A chemical management plan describing all chemicals to be stored on site and include copies of Safety Data Sheets for all chemicals used for regulated medical waste treatment and EPA pesticide registration, if applicable.

4. Documentation providing occupational safety and health assurance.

H. The applicant shall demonstrate that all required surrogate pathogens and resistant bacterial endospores are inactivated to criteria specified in subsections B through F of this section under the representative surrogate waste load compositions.

I. The applicant shall demonstrate where the relationship between effective treatment, biological indicator data, and data procured from real-time parametric monitoring devices for the treatment unit.

J. The review of the application will occur in accordance with this subsection.

1. After receiving an application that includes the information and demonstrations required in subsections A through I of this section, the department will perform an administrative review and determine whether the information received is sufficient to approve the proposed chemical or alternate treatment technology. If the information is deemed to be insufficient, the department will request that additional information be furnished.

2. The applicant may submit the additional information requested or may demonstrate that the additional information should not be required. If the department agrees that the additional information is not required, the department will determine if the application is complete.

3. After the application is deemed complete, the director may then issue a treatment technology approval. The approval shall be issued under the conditions specified in the manufacturer's instructions and equipment specifications, operating procedures, and conditions as outlined in the application, including, as applicable, treatment times, temperatures, pressure, chemical concentrations, irradiation doses, feed rates, and waste load composition. Any significant revision to these conditions will require reapplication for approval in accordance with this section.

4. Following technology approval, any facility wishing to use the approved technology to treat regulated medical waste shall apply for and obtain the necessary permits in accordance with Part V (9VAC20-121-300 et seq.).

**9VAC20-121-260. Validation testing.**

A. Prior to using any treatment system, the facility must conduct validation testing that employs the use of process controls, biological indicators, and process monitoring to establish operating parameters to demonstrate effective treatment of regulated medical waste.

B. Prior to validation testing, the owner or operator shall submit to the department a treatment plan containing the information required by 9VAC20-121-330 E. The plan shall demonstrate that the validation protocols for each treatment unit meet the standards of this section and shall indicate any additional protocols specific to the regulated medical waste to be treated, such as the use of packaging types that may affect treatment of the waste. Validation testing must be conducted in accordance with an approved treatment plan and the requirements of this section. The validation test results and operating parameters must be submitted to the department for review prior to acceptance of regulated medical waste for treatment.

C. To demonstrate reproducibility, a minimum of three separate treatment runs must be performed on three separate days, using three distinct loads, during which the department is present to witness at least one complete validation test run. All test runs shall meet the following requirements:

1. Operating parameters used during the tests must be consistent with the parameters that will be used during routine operation of the treatment process (e.g., cycle duration, temperature, pressure, chemical concentration, irradiation exposure time, or other treatment parameters as applicable).

2. Surrogate waste load composition (e.g., porosity, liquids, solids, moisture content, organic matter, thermal resistance, and type of packaging or containers) and [ waste load waste load ] configuration (e.g., packing density and orientation) used during the tests must be consistent with the waste properties and loading process that will be used during routine operation. The surrogate waste load shall represent the most difficult waste anticipated to be treated during routine operation.

3. The weight and volume of the surrogate waste loads used during the tests must be consistent with the amount of waste that will be treated during routine operation. Validation testing must be performed at the treatment unit's full capacity unless an alternate load size is approved.

D. To assess treatment performance, the system must employ commercially-prepared biological indicators from the same lot or batch, each containing spores that demonstrate the necessary resistance for the treatment method, as determined by the department. The indicators must:

1. Have a minimum concentration of 6 log<sub>10</sub> spores per biological indicator. The concentration must be higher and more thermally resistant than the bioburden routinely associated with the waste;

2. Include a supplier's certificate of performance (or certificate of analysis) that identifies the organism (genus, species, strain, and population) and, for thermal treatment systems (including autoclaves), the D-value and Z-value. The D-value must be 1.5 to 3.0 minutes, unless otherwise approved by the department, and the Z-value must be no less than 50°F (10°C);

3. Be appropriate for the type of waste and device (i.e., self-contained, suspension, or spore strip), including the shelf life, the carrier material and primary packaging, the culture medium (for self-contained biological indicators) and the media, growth, and culture conditions (for non-self-contained biological indicators);

4. Be compatible with the treatment process and have a resistance relative to the temperature, pressures, conditions, chemicals, or irradiation used in the process; the infectious agents on a substrate; the type and density of the waste to be treated; and its packaging;

5. Be placed in a carrier system (e.g., net bags, wrapped in a paper towel and encased in cotton batting or inside tennis balls, socks, or alloy containers with holes in them) designed to mimic the thermal resistance of the waste before placement into the package to be treated. Materials used to hold biological indicators must be similar to the waste to be treated, provide effective protection from damage or breakage or from otherwise being compromised, be loose in the bulk of the waste, and be easily retrievable at the end of each validation test run. Indicators shall not be placed in carrier systems that would enhance treatment or produce erroneous results (such as metal containers that would conduct heat);

6. Be placed throughout the waste load during each validation test at the coldest or most challenging locations within the treatment unit, where the sum of all influences on the microorganisms results in minimal inactivation for a defined waste load;

7. Be used in accordance with the quantity specified as follows, for each test run:

a. Three biological indicators per cycle for 0 to 110 pounds of waste per load;

b. Five biological indicators per cycle for 111 to 550 pounds of waste per load;

- c. Seven biological indicators per cycle for 551 to 1,100 pounds of waste per load;
- d. Nine biological indicators per cycle for 1,101 to 1,650 pounds of waste per load;
- e. Eleven or more biological indicators per cycle, as determined by the department, for greater than 1,650 pounds of waste per load; and
- f. One or more biological indicators from the same lot or batch to be left untreated and used as a control;

8. Be stored in accordance with the manufacturer's specifications when not in use. Expired biological indicators shall not be utilized.

9. Biological indicators in the form of paper strips must not be used in devices or areas where fluids can pool or puddle around the indicator. Self-contained biological indicators with vent caps must not be used where liquids may accumulate and contaminate the indicators.

10. Qualitative or quantitative biological indicators shall be used provided the operator or vendor of the technology provides evidence from such sources as peer reviewed journals that support the use of that particular indicator. Biological indicators requiring microbial bioassay to confirm effective treatment must be quantitatively analyzed after the treatment cycle. All self-contained biological indicators used for test runs must be evaluated for growth (e.g. qualitatively analyzed for color change) following incubation in accordance with the manufacturer's instructions.

E. Concurrent with biological indicators, the process must employ devices or instrumentation that demonstrates the treatment unit is achieving critical operating parameters for effective treatment. Process monitoring shall include:

1. Thermochemical indicators (e.g., tape, paper strips, or integrators) that demonstrate that the waste has been exposed to a certain temperature or chemical concentration;

2. Thermochemical recording devices (e.g., wireless data loggers, thermocouples, or chemical monitoring probes) that are placed in or on waste packages and that provide a measurable record of actual treatment conditions of the waste [ ; and. The minimum number of thermochemical recording devices to be used during each validation test shall be at least one device per treatment bin plus one additional device in the treatment chamber; and ]

3. Parametric controls or monitoring devices integral to the treatment system that record critical operational treatment parameters and provide a record of measurements that can be correlated to effective treatment.

F. Effective treatment of regulated medical waste must achieve a 6 log<sub>10</sub> or greater reduction of the viable spore concentrations of the most appropriate bacterial species for the treatment method. Effective treatment is demonstrated by no growth in all treated biological indicators and growth in all untreated biological indicators during each test run. In certain situations where the waste poses a greater risk (e.g., a higher bioburden waste), the department may require a greater reduction.

G. The facility shall submit to the department for approval a summary of the validation test results demonstrating the treatment effectiveness and specifying the operating parameters based on the results of all validation test runs. The report shall describe the results of all validation test runs, including:

1. Date and time of all test runs, including the operator's name and cycle start and end times;

2. Surrogate waste load composition, configuration, and size;

3. Number, type, batch or lot number, expiration date, and placement of biological indicators, thermochemical indicators, and thermochemical recording devices; and

4. Results of all methods used to monitor operating parameters achieved throughout the treatment cycle and the accuracy of parametric monitoring devices, including copies of charts, graphs, or other read-outs from the treatment equipment and growth results of all treated indicators and untreated controls.

H. Validation testing must be repeated when any of the following occurs:

1. Failure of any treatment process to achieve operational parameters, such as time, temperature, or pressure during validation testing;

2. Failure to achieve microbial inactivation in any biological indicator during any treatment cycle during validation testing;

3. Failure of the untreated control indicator to show growth of the viable spore concentration;

4. Any modifications to any of the treatment process operational parameters, bioburden, waste mass, chemical type, concentration, irradiation or exposure time, type of waste to be treated, or mechanical or engineering changes to the treatment system from those assessed during the validation testing;

5. A failure identified in subdivision 1, 2, or 3 of this subsection during periodic challenge testing as identified by biological or process monitoring that occurs three or more times in a calendar year or

during the first 30 days of actual operation;

6. A treatment device has been operational without a repeat validation for at least five years; or

7. A treatment device has not been used for at least one year.

**9VAC20-121-270. Periodic challenge testing.**

A. After initial validation testing and during routine operation, a regulated medical waste treatment facility shall perform periodic challenge testing under full loading to evaluate the effectiveness of each treatment device in accordance with procedures outlined in the facility's approved treatment plan.

B. Periodic challenge testing shall be performed in accordance with the following requirements:

1. Biological indicators shall be used to periodically challenge test a load of regulated medical waste and must comply with all requirements of 9VAC20-121-260 D, with the exception of the quantity of biological indicators required under 9VAC20-121-260 D 7.

2. Periodic challenge testing must include at least one-third of the number of appropriate biological indicators that are required for the validation test, or two indicators, whichever is greater, unless otherwise determined by the department. One or more additional biological indicators from the same lot or batch shall be left untreated and used as a control.

3. The results of all periodic challenge testing shall be maintained for three years in accordance with 9VAC20-121-340 and shall include:

a. Date and time of all challenge tests, including the operator's name and cycle start and end times;

b. Number, type, batch or lot number, expiration date, and placement of biological and thermochemical indicators; and

c. Results of all methods used to monitor operating parameters achieved throughout the treatment cycle, including copies of charts, graphs, or other read-outs from the treatment equipment and growth results of all treated indicators and untreated controls.

4. Effective treatment of regulated medical waste must be demonstrated by a 6 log<sub>10</sub> or greater reduction of spore concentrations in all biological indicators in each periodic challenge test. A challenge test is considered a failure if any of the following occurs:

a. Failure of any treatment process to achieve operational parameters such as time, temperature, or pressure;

b. Failure to achieve microbial inactivation in any biological indicator during any treatment cycle. All biological indicators must show passing results (no growth in the viable spore concentration) after treatment or the challenge test is considered a failure; or

c. Failure of the untreated control indicator to show growth of the viable spore concentration.

C. Any regulated medical waste treated during or after a challenge test shall be stored temporarily until challenge test results are obtained. Regulated medical waste shall not be shipped offsite until the challenge test is complete and shows passing results for all biological indicators.

D. Unless otherwise approved by the department, for the first 30 days of actual operation, each treatment unit shall undergo challenge testing twice per day. The first load of each day shall be used for one of the required challenge tests.

E. Following the first 30 days of actual operation, periodic challenge testing must be conducted at a minimum of once per week or every 40 hours of operation, whichever is greater.

F. After six months of successful operation with no challenge test failures in weekly or 40- hour testing, challenge testing shall be conducted at least once per month.

G. Any challenge test failures during the first six months of actual operation shall require a return to daily challenge testing for at least 30 operating days. After the first six months of actual operation, any challenge test failure shall require a return to challenge testing once per week or every 40 hours of operation, whichever is greater.

H. Following any challenge test failure:

1. The waste shall continue to be managed as regulated medical waste and shall be retreated, stored temporarily until retreatment, or diverted to another approved facility for treatment or disposal. Regulated medical waste shall not be considered treated until a subsequent challenge test is conducted with passing results;

2. The facility shall evaluate and correct any issues with the treatment cycle and unit prior to treating any additional waste;

3. The facility shall notify the department of the failure in accordance with 9VAC20-121-340; and

4. The facility shall increase the frequency of challenge testing in accordance with subsection G of this section.

**9VAC20-121-280. Disposal of treated regulated medical waste.**

A. Regulated medical waste that has been treated in accordance with this part is no longer a regulated medical waste. Treated regulated medical waste is a solid waste. Treated waste may be compacted in a closed container in a safe and sanitary manner.

B. Treated waste shall be disposed of at a permitted solid waste disposal facility in accordance with the Solid Waste Management Regulations (9VAC20-81) and the solid waste disposal facility's permit. Regulated medical waste not treated in accordance with this chapter remains a regulated medical waste and shall not be transported to, received for transport or disposal by, or disposed in any solid waste management facility.

C. Where non-bulk treatment is used, treated waste shall be placed in sealed bags or containers that allow for visible assessment of treatment, such as clear bags or bags marked with sterilization indicators. The bags shall not be red in color. Opaque bags and bags with special labels are permissible if agreed upon in writing by the solid waste management facility receiving the treated waste. Treatment cart liners that are resistant to treatment conditions (such as temperature) may be used to package treated waste. Where bulk treatment is used and the solid waste is immediately placed or compacted in closed bulk solid waste management containers that are more than 64 gallons in volume, the repackaging of the solid waste in bags is not required. Treated waste shall not be repackaged as regulated medical waste.

D. The regulated medical waste treatment facility shall have a written [ agreement with treated waste disposal plan that shall be provided to ] each permitted solid waste management facility that will transfer, store, or dispose of the treated waste. The [ agreement plan ] shall specify and include the following:

1. A description of how the treated waste will be packaged and transported to each solid waste management facility, including the types and colors of bags or containers used, and any special labeling if applicable;
2. The type of regulated medical waste treated, treatment method, and name, address, and telephone number of the treatment facility; and
3. The name, address, and telephone number of any transfer stations or other intermediate facilities or locations where the treated waste will be transferred or temporarily stored prior to transport to a permitted solid waste disposal facility.
- [ 4. The plan shall be updated and redistributed to receiving facilities when there are changes to the treatment process or facility operation that impact the plan.
5. The facility shall maintain records of distribution of the plan to all transfer, storage, or disposal facilities that manage the treated waste. ]

E. If treated residuals are determined to be hazardous, then the waste must be managed in accordance with the Virginia Hazardous Waste Management Regulations (9VAC20-60).

**9VAC20-121-290. Closure requirements.**

A. The owner or operator of a regulated medical waste management facility shall close the facility in a manner that minimizes the need for further maintenance, and controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, the post-closure escape of regulated medical waste, uncontrolled effluent, surface runoff, or waste decomposition products to the groundwater, surface water, or atmosphere.

1. When a unit that has been used for regulated medical waste management is to cease operations involving regulated medical waste, the unit and all related equipment, structures, and surfaces shall be thoroughly cleaned and disinfected. Cleaning shall be conducted with detergent and water. At a minimum, disinfection shall include using an EPA-registered hospital grade disinfectant effective against mycobacteria in accordance with manufacturer's label instructions, unless it can be demonstrated to the satisfaction of the department that an alternate EPA-registered disinfectant will be protective of human health and the environment and is appropriate for the type of regulated medical waste managed and surfaces being disinfected.

2. All regulated medical waste, materials contaminated with waste constituents, and treatment residue shall be removed and disposed of in accordance with this chapter.

B. Closure plan and modification of plan.

1. The owner or operator of a regulated medical waste management facility shall have a written closure plan that meets the requirements of 9VAC20-121-330 G.

2. The owner or operator may amend the closure plan at any time during the active life of the facility. The owner or operator shall so amend the plan any time changes in operating plans or facility design affects the closure plan. The amended closure plan shall be placed in the operating record.

3. The owner or operator shall submit to the department the amended closure plan that was placed in the operating record.

4. At least 180 days prior to beginning closure of each unit, the owner or operator shall notify the director of the intent to close.

5. The owner or operator shall provide to the department a certification that the facility has been closed in accordance with the closure plan.

C. The owner or operator shall complete closure activities in accordance with the closure plan and within six months after receiving the final volume of wastes. The director may approve a longer closure period if the owner or operator can demonstrate that the required or planned closure activities will take longer than six months to complete, and that the owner or operator has taken all steps to eliminate any significant threat to human health and the environment from the unclosed but inactive facility.

D. The owner or operator shall post one sign notifying all persons of the closing and providing a notice prohibiting further receipt of waste materials. The sign shall remain in place until closure activities are complete. Further, suitable barriers shall be installed at former accesses to prevent new waste from being delivered.

E. The department shall inspect the facility to confirm that the closure is complete and adequate in accordance with this chapter. The department shall notify the owner of a closed facility in writing if the closure is satisfactory, or if unsatisfactory, shall require any necessary construction or such other steps as may be necessary to bring unsatisfactory sites into compliance with this chapter. Notification by the department that the closure is satisfactory does not relieve the operator of responsibility for corrective action to prevent or abate problems caused by the facility.

## Part V

### Permitting of Regulated Medical Waste Management Facilities

#### **9VAC20-121-300. Applicability.**

A. Any facility operated for the transfer or treatment of regulated medical waste that is not exempt in accordance with this chapter, must hold a permit-by-rule from the department prior to commencement of operations.

B. Each regulated medical waste management facility permit-by-rule shall be limited to one site and shall be nontransferable between sites.

C. A new permit-by-rule is required when there is:

1. Any new regulated medical waste management facility; or

2. Any change in design or process of a regulated medical waste management facility that will [~~in the opinion of the department,~~] result in a [substantially] different type of facility. [These changes may include, but are not limited to, a change from transfer to treatment facility, change of physical location, or change from captive to non-captive facility.]

D. The director may grant a variance from any provision contained in this part to a permittee provided the requirements of Part VI (9VAC20-121-400 et seq.) of this chapter are met.

E. The following regulated medical waste management activities are conditionally exempt from the requirements of this part provided no open dump, hazard, or public nuisance is created and wastes are managed in accordance with the requirements promulgated by other applicable state or federal regulations or the conditions provided in this section.

1. Household sharps may be collected in a sharps drop box located in a public restroom, airport, train station, health clinic, pharmacy, health department, police or fire station, community organization building, permitted solid waste management facility, or other location as a convenience to the public, as long as the following requirements are met:

a. Sharps drop boxes shall only receive household sharps from individual home generators who choose to transport household sharps to the drop box. Sharps drop boxes shall not receive waste from collection vehicles or other entities that have collected waste from more than one real property owner;

b. All owners and operators of sharps drop boxes must comply with the general handling, packaging and labeling, storage, reusable container, spill cleanup, transportation, and Category A waste management requirements for regulated medical waste outlined in Part III (9VAC20-121-100 et seq.) of this chapter; and

c. Collected sharps shall be treated or disposed of as regulated medical waste in accordance with this chapter. Untreated sharps shall not be recycled or disposed of in a solid waste landfill or other solid waste management facility. Collected sharps that are shipped offsite as part of a mail-back program shall be transported in accordance with the requirements of 39 CFR 111 and 9VAC20-121-150 K.

2. Facilities that employ a treatment method to treat regulated medical waste onsite but subsequently package, label, and transport the waste offsite to be further managed as regulated medical waste are exempt from permitting in accordance with this chapter, but are subject to all other standards outlined in Part III (9VAC20-121-100 et seq.) for the management of regulated medical waste.

3. Treatment systems (such as an effluent decontamination system) used to treat industrial or domestic sewage discharges in compliance with federal, state, or local pretreatment requirements as applicable. If the treatment unit separates solids from liquids prior to discharge, the solids shall be managed as regulated medical waste unless it meets an exemption in accordance with this chapter.

4. Combustion of up to 10% by weight of regulated medical waste in a Virginia Solid Waste Management Regulations (9VAC20-81) permitted solid waste incinerator, thermal treatment, or waste to energy facility. Regulated medical waste must be an approved supplemental waste or included in an approved material review process in accordance with the State Air Pollution Control Board regulations and management of the regulated medical waste prior to addition to the incinerator, thermal treatment, or waste to energy unit must be in accordance with this chapter.

5. Temporary offsite storage of regulated medical waste generated from an emergency cleanup for up to 72 hours, including in a locked vehicle, prior to transporting directly to a regulated medical waste management facility permitted to receive the waste for treatment, transfer, or disposal, provided that all regulated medical waste is:

- a. Generated from an emergency or unplanned sudden or nonsudden spill or release of regulated medical waste requiring immediate response in order to protect human health or the environment, and the regulated medical waste was not generated by a health care professional or nonstationary health care provider;
- b. Collected from not more than one individual regulated medical waste generator and is not received from collection vehicles or other entities that have collected waste from more than one real property owner;
- c. Managed, stored, and transported in accordance with all requirements of Part III (9VAC20-121-100 et seq.) of this chapter, except for the storage timeframe which shall be no more than 72 hours; and
- d. Not a Category A waste, hazardous waste, or radioactive waste.

#### **9VAC20-121-310. Permits by rule and emergency permits.**

A. This subsection contains the requirements for permits-by-rule. The owner or operator of a facility described in subdivision A 1 of this section shall be deemed to have a regulated medical waste management facility permit if (i) the owner or operator submits the completed DEQ Form RMW PBR, Regulated Medical Waste Management Facility Permit-by-Rule Form, and all required information and attachments as detailed in subdivision A 2 of this section, and (ii) the department acknowledges completeness of the submittal per subdivision A 4 of this section.

1. Except for exempt facilities described in 9VAC20-121-300 E, the owner or operator of the following regulated medical waste management facilities shall apply for a permit-by-rule:

- a. Regulated medical waste transfer stations as defined by this chapter, including when a vehicle transporting regulated medical waste will be parked for 24 hours or more during transport;
- b. Facilities treating regulated medical waste employing a treatment method described in 9VAC20-121-240; and
- c. Facilities treating regulated medical waste employing an alternate treatment method as described in 9VAC20-121-250.

2. The owner or operator of a regulated medical waste management facility shall submit the following information and documentation to the department:

- a. To initiate the permit-by-rule application process, any person who proposes to establish a new regulated medical waste management facility, or modify an existing regulated medical waste management facility shall file a notice of intent with the director stating the type of facility for which the permit-by-rule application is made, the precise location of the proposed facility, and the intended use of the facility. The notice shall be in letter form and be accompanied by the following documents:

(1) A disclosure statement (DEQ Forms DISC-01 and DISC-02) identifying all key personnel as required by § 10.1-1408.1 of the Code of Virginia.

(2) A copy of the certification for at least one operator licensed by the Board for Waste Management Facility Operators as required by § 10.1-1408.2 of the Code of Virginia.

(3) A certification (DEQ Form CERT-01) from the governing body of the county, city, or town in which the facility is to be located stating, without qualifications, conditions, or reservations, that the location and operation of the facility are consistent with all applicable ordinances. No certification shall be required for the application for a modification to an existing permit-by-rule.

(4) The results of the public participation effort conducted in accordance with the requirements contained in subdivision A 3 of this section;

b. A certification that the facility meets the siting standards, as applicable, of 9VAC20-121-210;

c. A certificate signed by a professional engineer that the facility has been designed and constructed in accordance with the design and construction standards, as applicable, of 9VAC20-121-220;

d. Design plans certified by a professional engineer consisting of at least the following:

(1) A title sheet indicating the facility name, who prepared the plans, the person for whom the plans were prepared, a table of contents, and a location map showing the location of the site and area to be served.

(2) An exterior site plan identifying building dimensions of the transfer or treatment facility and the location of property boundaries and building setbacks, fencing, loading or unloading areas, vehicle staging and queuing locations, and parking areas.

(3) An interior site plan identifying location and size of all receiving, storage, temporary storage, including storage areas to be used to segregate unauthorized waste, radioactive waste, hazardous waste, and other untreated waste from treated waste, and processing areas, and location of treatment units, reusable container washing stations, and floor drains.

(4) A process flow diagram for all treatment units showing, piping and instrumentation, vents, and liquid discharge locations;

e. Documentation of the authorization to discharge into an approved sanitary sewer system or publicly or privately owned treatment works;

f. A certification that the facility meets the standards of Part III (9VAC20-121-100 et seq.) and Part IV (9VAC20-121-200 et seq.), as applicable, ~~in a~~ and a copy of the  ~~]~~ regulated medical waste management plan to be maintained in the operating record in accordance with 9VAC20-121-330. The certification shall also include a statement that the emergency contingency plan has been provided to the local police and fire departments, local emergency manager, and local emergency health coordinator;

g. Alternate treatment technologies shall provide a copy of the treatment technology approval;

h. A treatment plan for each treatment unit in accordance with 9VAC20-121-330 E;

i. For treatment facilities, a  ~~]~~ written agreement treated waste disposal plan  ~~]~~ in accordance with 9VAC20-121-280 D  ~~]~~ with each permitted solid waste management facility that will transfer, store, or dispose of treated waste  ~~]~~ ;

j. A closure plan in accordance with 9VAC20-121-330 G;

k. Demonstration of legal control over the site for the permit life;

l. A certification from the State Corporation Commission that the business entity pursuing the permit-by-rule status is a valid entity, authorized to transact its business in Virginia. This requirement does not apply to those facilities owned solely by governmental units;

m. Closure cost estimates and proof of financial responsibility as required by the Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70). Proof of financial responsibility must be for the entity identified in subdivision A 2 I of this section. For treatment facilities, proof of financial responsibility is required prior to department approval to begin operation in accordance with 9VAC20-121-320; and

n. The applicable permit fees under the provisions of 9VAC20-90.

### 3. Public participation.

a. The applicant for a new regulated medical waste transfer station or treatment facility shall publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation of the intent to construct and operate a facility eligible for a permit-by-rule. The notice shall include:

(1) A statement of the applicant's intent to apply for a permit-by-rule to operate a regulated medical waste transfer station or treatment facility;

(2) A brief description of the proposed facility and its location;

(3) A statement that the purpose of the public participation is to identify issues of concern, to facilitate communication and to establish a dialogue between the applicant and persons who may be affected by the facility;

(4) Announcement of a 30-day comment period, in accordance with subdivision A 3 d of this section;

(5) Announcement of the date, time, and location for a public meeting to be held in accordance with subdivision A 3 c of this section;

(6) The name, address, and telephone number of the owner's or operator's representative who can be contacted by interested persons to answer questions or receive comments on the siting and operation of the proposed regulated medical waste facility; and

(7) Location where copies of the documentation to be submitted to the department in support of the permit-by-rule notification can be viewed and copied in accordance with subdivision A 3 b of this section.

b. The owner or operator shall place a copy of the documentation and support documents in a location accessible to the public in the vicinity of the proposed facility.

c. The owner or operator shall hold a public meeting not earlier than 14 days after the publication of the notice required in subdivision A 3 a of this section and no later than seven days before the close of the 30-day comment period. The meeting shall be held to the extent practicable in the vicinity of the proposed facility at a time convenient for the public.

d. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period will begin on the date the owner or operator publishes the first notice in the local newspaper.

e. The requirements of this section do not apply to the owners or operators of a regulated medical waste treatment unit that has received a permit from the department based on the regulations promulgated by the State Air Pollution Control Board or State Water Control Board that required facility-specific public participation procedures.

4. Upon receiving the certifications and other required documents, including the results of the public meeting and the applicant's response to the comments received, the department shall conduct a completeness review and respond within 30 days.

a. If the applicant's submission for a regulated medical waste transfer station is administratively complete, the applicant shall be deemed to operate under permit-by-rule status.

b. If the applicant's submission for a treatment unit is administratively complete, the applicant shall be deemed to operate under permit-by-rule status and granted authorization to initiate validation testing in accordance with an approved validation protocol and 9VAC20-121-320. The facility shall not accept regulated medical waste for treatment until the results of validation testing and operating parameters are submitted and approved by the department.

c. If the applicant's submission is administratively incomplete, the department will respond with a letter stating that the facility will not be considered to have a permit-by-rule or initiate the validation protocol until the missing certifications or other required documentation is submitted. At the time of the initial receipt or at a later date, the director may require changes in the documents designed to assure compliance with this chapter. Should such changes not be accomplished by the facility owner or operator, the facility will not be deemed to have a regulated medical waste management facility permit.

5. A permit-by-rule shall not be transferred by the permittee to a new owner or operator. However, when the property transfer takes place without proper closure, the new owner shall notify the department of the sale and fulfill all the requirements contained in subdivision A 2 of this section. Upon presentation of the financial assurance proof required by Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70) by the new owner, the department will release the former owner from the closure and financial responsibilities and acknowledge existence of the new permit-by-rule in the name of the new owner.

6. The owner or operator of a facility operating under a permit-by-rule may modify its design and operation by furnishing the department a new certificate and applicable permit fees under the provisions of 9VAC20-90. For modifications of design, the new certificate shall be prepared by a professional engineer and shall include new documentation required under subdivision A 2 of this section, as applicable, and subdivision A 3 of this section. For modifications to the operations, the owner or operator shall submit to the department a new certificate and documentation required under subdivision A 2 of this section, as applicable. For treatment units, a new treatment plan and revalidation with department approval to begin operation will be required for design and operation changes that include changing the treatment unit type, changing the treatment unit operating parameters, changes in waste stream, and adding a new treatment unit. Whenever modifications in the design or operation of the facility affect the provisions of the closure plan, the owner or operator shall revise the closure plan and submit to the department a new certificate and documentation required under subdivision A 2 of this section, as applicable. Should there be an increase in the

closure costs, the owner or operator shall submit a new proof of financial responsibility as required by 9VAC20-70.

7. The director may terminate a regulated medical waste management facility's coverage under a permit-by-rule and require closure of the facility when the director finds that:

- a. As a result of changes in key personnel, the requirements necessary for a permit-by-rule are no longer satisfied;
- b. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in the disclosure statement or any other report or certification required under this chapter or has knowingly or willfully failed to notify the director of any material change to the information in the disclosure statement;
- c. Any key personnel have been convicted of any of the crimes listed in § 10.1-1409 of the Code of Virginia, punishable as felonies under the laws of the Commonwealth or the equivalent under the laws of any other jurisdiction or has been adjudged by an administrative agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth, or any other state, and the director determines that such conviction or adjudication is sufficiently probative of the permittee's inability or unwillingness to operate the facility in a lawful manner; or
- d. The operation of the facility is inconsistent with the facility's regulated medical waste management plan or the requirements of Part IV (9VAC20-121-200 et seq.) of this chapter.

B. Notwithstanding any other provision of this chapter, in the event the director finds an imminent and substantial endangerment to human health or the environment, the director may issue a temporary emergency permit to a facility to allow transfer, treatment, or storage of regulated medical waste. Such permits:

1. May be issued to allow:

- a. Transfer, treatment, or storage of regulated medical waste at a nonpermitted facility;
- b. Transfer, treatment, or storage of types of regulated medical waste not covered by the permit for a facility with an effective permit;
- c. Treatment of regulated medical waste by a new or temporary treatment unit or treatment unit or method not covered by the permit for a facility with an effective permit; or
- d. Temporary transfer, treatment, or storage activities not covered by the permit for a facility with an effective permit.

2. If oral, the emergency permit shall be followed within five calendar days by a written emergency permit.

3. Shall not exceed 90 days in duration.

4. Shall clearly specify:

- a. The regulated medical wastes to be received;
- b. The manner and location of their transfer, treatment, storage, or disposal; and
- c. For emergency treatment units, the treatment plan in accordance with 9VAC20-121-330 E.

5. Shall be accompanied by a public notice including:

- a. Name and address of the office granting the emergency authorization;
- b. Name and location of the facility so permitted;
- c. A brief description of the wastes involved;
- d. A brief description of the action authorized and reasons for authorizing it; and
- e. Duration of the emergency permit.

6. Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of this chapter, and shall include the applicable permit fees under the provisions of 9VAC20-90.

7. For emergency treatment units, the facility shall not accept regulated medical waste for treatment until the results of validation testing and operating parameters are submitted and approved by the department.

8. Any permit issued under this subsection may be renewed not more than three times if necessary and with appropriate justification. Each such renewal shall be for a period of not more than 90 days.

#### **9VAC20-121-320. Effect of the permit.**

A. A regulated medical waste treatment facility will be approved to perform its validation protocol following determination of a complete permit-by-rule application in accordance with the procedures outlined in 9VAC20-121-310. Before receipt of waste by the facility, the permittee must:

1. Arrange for a department representative to inspect the site to observe at least one validation test run and perform validation testing in accordance with approved protocols.

2. Submit to the department for approval a summary of the validation test results demonstrating the treatment effectiveness and specifying the operating parameters based on the results of all validation test runs. The report shall include the results of all validation test runs.

B. Following approval by the department of the validation results, a regulated medical waste treatment facility may begin receiving and treating regulated medical waste as defined in the permit-by-rule. The facility shall comply with the operating parameters necessary to achieve treatment. A regulated medical waste treatment facility shall not receive or treat regulated medical waste until the department has approved the validation results and operating parameters to be used for the treatment unit.

C. Each facility permitted to accept regulated medical waste requires periodic inspection and review of records and reports. By accepting coverage under a permit-by-rule in accordance with 9VAC20-121-310, the owner or operator agree to the specified periodic inspections.

D. Compliance with a valid permit-by-rule and this chapter during its term constitutes compliance for purposes of enforcement with the Virginia Waste Management Act. However, a permit-by-rule may be modified or terminated for cause as set forth in 9VAC20-121-310 A 6 and A 7.

E. A permit-by-rule does not convey any property rights or any sort or any exclusive privilege.

F. A permit-by-rule does not authorize any injury to persons or property or invasion of other private rights or any infringement of federal, state, or local law or regulations.

G. A permit-by-rule may be transferred by the permittee to a new owner or operator only if the permit-by-rule has been terminated and reissued or modified to identify the new owner or operator and incorporate such other requirements as may be necessary. Upon presentation of the financial assurance proof required by 9VAC20-70 by the new owner, the department will release the old owner from the old owner's closure and financial responsibilities and acknowledge existence of the new or modified permit-by-rule in the name of the new owner.

#### **9VAC20-121-330. Regulated medical waste management plan.**

A. All permitted regulated medical waste management facilities, such as regulated medical waste transfer stations or treatment facilities, shall prepare and maintain a written regulated medical waste management plan. The plan shall include a certification page signed by a responsible official. This signature shall certify the plan meets the requirements of this chapter. The plan shall be maintained in the operating record and shall be made available for review by the department upon request. The plan shall include, at a minimum, the items in subsections B through G of this section.

B. A written waste acceptance plan, which includes, at a minimum:

1. Types and quantities of regulated medical waste to be managed, including sources of the waste and proposed service areas (if waste is accepted from offsite). The plan shall identify:

a. Acceptable waste types for treatment onsite (if applicable); and

b. Acceptable wastes types to be transferred to another approved facility for treatment or management offsite. The plan shall include a description of the offsite facility that will receive the waste, including name, address, and telephone number for the receiving facility and how specific waste types will be managed.

2. Protocols for identification and segregation of regulated medical waste from other types of waste, including radioactive wastes, hazardous wastes, and other solid waste. The plan shall include a description of how incoming waste will be monitored to detect the presence of radioactive materials and actions that will be taken to verify the source of any alarm.

3. Procedures for handling Category A waste in accordance with 9VAC20-121-160.

4. Facilities that accept regulated medical waste from offsite shall include the following:

a. A description of onsite traffic control, schedules, and routing for waste delivery vehicle flow and methods of enforcement of traffic flow plans for the waste delivery vehicles;

b. Procedures for arrival confirmatory inspections of each delivery vehicle and their loads to ensure that the waste has been packaged and transported in accordance with the U.S. Department of Transportation Hazardous Materials Regulations and this chapter;

c. A description of how the waste will be off-loaded, weighed, and compared to the shipping paper that accompanies the waste and how any discrepancies will be resolved; and

d. For each generator or customer, the facility shall maintain a signed certificate, contract, or equivalent document for each load or inclusive of all loads received from the generator in which the generator affirms that the loads do not contain unauthorized waste.

5. Procedures for handling regulated medical waste received from onsite or offsite that is not packaged, labeled, or marked correctly; leaking, dented, ripped, torn, bulging, or otherwise

damaged; or not accompanied by a shipping paper.

C. A written description of the procedures for the detection and management of unauthorized waste in accordance with 9VAC20-121-230 K. The plan shall contain, at a minimum:

1. A list of unauthorized waste types that are not acceptable for management at the facility.
2. Methods used by the operator to prevent management of unauthorized wastes, such as routine monitoring and observation of incoming waste, generator agreements, and informational materials.
3. Procedures to detect and address any unauthorized waste discovered at the facility, including the protocol for identifying and contacting the generator and to prevent recurrence.
4. Procedures for containing and storing each type of unauthorized waste, such as radioactive or hazardous waste, until it is removed for proper management, including designated storage locations, storage timeframes, packaging, and labeling.
5. Instructions for documenting and notifying the department of receipt and ultimate disposition of unauthorized waste.

D. A written operations plan that includes, at a minimum:

1. A general description of the overall process and equipment used. The plan shall include the following: hours of operation; process rate; procedures for daily startup; methods, containers, and other devices for the collection, off-loading, tipping, and conveyance of regulated medical waste from the point of generation or receipt to areas for processing; normal loading, unloading, and waste handling procedures; and timeframes for transfer or treatment.
2. Protocols for packaging and labeling regulated medical waste for treatment onsite or transport offsite, including protocols for labeling or marking wheeled carts, containers, conveyance systems, or other items used for moving regulated medical waste.
3. Procedures for temporary onsite storage of regulated medical waste until it is collected for treatment onsite or transport offsite. The plan shall identify each storage location and capacity, the maximum length of time the waste will be stored, and procedures used to document compliance with required storage timeframes.
4. Methods and equipment used to empty, clean, and disinfect reusable containers in accordance with 9VAC20-121-130, including types and quantities of reusable containers and disinfectant to be used, disinfection procedures utilized between uses, and final disposal in case of damage or wear and tear. The plan shall also include a description of appropriate personal protective equipment, such as puncture and leak resistant gloves, safety glasses or face shield, protective coveralls or bib, protective footwear, and mask or respiratory protection as needed, used to protect personnel when cleaning and disinfecting reusable containers.
5. Procedures for spill prevention and response and how spilled waste will be collected, packaged, and the spill area decontaminated in accordance with 9VAC20-121-140. This includes locations and contents of all spill containment and cleanup kits.
6. Names, addresses, and telephone number of final treatment or ultimate disposal facilities to be used for untreated waste and treated residues, facility-generated wastes, unauthorized waste, hazardous waste, radioactive waste, and other waste bypassed or disposed.
7. A description of equipment and procedures used to control access to areas used for the storage, transfer, and treatment of regulated medical waste. The plan shall identify all entry and exit points where access is controlled.
8. Methods and equipment used for routine cleaning and disinfection of facility equipment, floors, vehicles, and other surfaces that come into contact with regulated medical waste.
9. Measures used to control and monitor for fire, dust, noise, litter, odors, vectors, and blowing debris at the facility.
10. Collection and management of effluent, wash water, and other runoff from facility floors, storage and processing areas, waste compactors, and reusable container cleaning and disinfection areas, including location and discharge of drains.
11. Identification of all appropriate personal protective equipment, such as puncture and leak resistant gloves, safety glasses or face shield, protective coveralls or bib, protective footwear, and mask or respiratory protection as needed, and when the items are used to protect personnel managing regulated medical waste at the facility. The plan shall also include a description of donning and offing procedures for personal protective equipment.
12. A self-inspection plan that at a minimum includes copies of the inspection checklists that comply with 9VAC20-121-230 U of this chapter along with a description of the types of potential problems and corrective actions that may result from the inspections.
13. A schedule and description of initial and annual refresher training to be provided to employees

in-person, in a language they can understand, including interactive training, and the types and numbers of adequately trained personnel. Initial training shall be provided within seven working days of employment, and annual refresher training shall be provided within one year from the date of the last training. Training shall include:

- a. Operational procedures in accordance with 9VAC20-121-230 V;
- b. Protocols to recognize, manage, document, and report unauthorized waste in accordance with 9VAC20-121-230 K;
- c. Procedures for retraining staff when noncompliance or other incidents occur; and
- d. Any other specialized waste training specific to the job function.

14. Procedures for recordkeeping in accordance with 9VAC20-121-340. The procedures shall address how inventory will be managed and methods used to track, link, and document specific incoming waste loads to specific outgoing waste loads.

15. A description of the type and estimated daily quantity of any facility-generated waste residues and procedures for handling and disposal of the residues.

E. A written treatment plan for each unit used to treat regulated medical waste that meets the standards of 9VAC20-121-240 and 9VAC20-121-250 and includes at a minimum:

1. A detailed description of the treatment technology to be used, including:

- a. An overview of the treatment process and description of the treatment unit, including manufacturer, model name or number, and treatment capacity;
- b. Procedures for equipment startup and shut down including warm-up, loading and unloading wastes, and anticipated load size during routine operation;
- c. A description of built-in automatic controls and fail safe mechanisms to ensure the waste cannot bypass the treatment process;
- d. If applicable, methods used to grind, shred, or puncture containers or packaging before, during, or after treatment, along with the methods to prevent exposure to the waste; contain any aerosol, bioaerosol, or mists caused by the process; and treat or filter any air evacuated from the chamber during processing;
- e. If applicable, methods to transfer from a grinder or shredder to or from a treatment unit under forced draft ventilation that removes fumes from the operations area to a safe discharge;
- f. Methods for maintaining negative pressure atmospheric control in the vessel and filtering all vents, discharges, and fugitive emissions of air from the process units through a high efficiency particulate air (HEPA) filter with efficiency of 99.97% for 0.3 microns. Installation and maintenance of filters shall be specified;
- g. Methods to manage effluent including location and discharge of drains; and
- h. A description of preventative maintenance that is performed on the treatment unit, including on engineering and electronic controls.

2. Identification of acceptable waste types to be treated and a listing of types of wastes that shall not be treated.

3. Treatment unit operating parameters (e.g., cycle duration, temperature, pressure, chemical concentration, irradiation exposure time, or other treatment parameters as applicable) and a description of how the operating parameters will be monitored and recorded, including number, type, and location of parametric monitoring devices, thermochemical indicators, and thermochemical recording devices, as applicable for routine operation.

4. Identification of the biological indicators to be used and documentation that lack of growth in the treated indicator corresponds to a 6 log<sub>10</sub> reduction of viable spores. An explanation of why each indicator is suitable for the treatment process and wastes to be treated, including referencing any standards, guidelines, or information from peer reviewed journals, shall be included. The facility shall also specify the:

- a. Type of biological indicators (spore strip, suspension, or self-contained), including a copy of the supplier's certificate of performance (or certificate of analysis) that identifies the organism (genus, species, strain, and population), purity, and for thermal treatment systems (including autoclaves) the D-value, and Z-value;
- b. Estimated shelf life and storage conditions to be maintained;
- c. Culture medium, incubation procedures, and incubation time (for self-contained biological indicators) and the media, growth, and culture conditions (for non-self-contained biological indicators), including how the results are to be interpreted and recorded;
- d. Carrier system or material and primary packaging;

e. Relative resistance to temperature, pressure, chemicals, irradiation, infectious agents, or any other conditions used in the treatment process; and

f. Number, location, and placement of untreated (control) and treated indicators relative to the coldest spot in the treatment unit as identified by the manufacturer.

5. Number, type, and placement of thermochemical indicators, including a description of how results will be interpreted and recorded.

6. A validation plan that includes a detailed description of the validation testing protocol used to demonstrate effective treatment by each treatment unit that meets the standards of 9VAC20-121-260 and includes:

a. Surrogate waste load composition, including packaging type, porosity, relative percentages of inorganic and organic components, moisture content, thermal resistance, and a relative breakdown of solid components, such as blood culture bottles, plastics (including suction canisters), microbiological waste, and sharps;

b. Load configuration including packing density, orientation, and load size;

c. Number, type, and location or placement of biological indicators; thermochemical indicators; thermochemical recording devices; and any other methods used to monitor operating parameters and accuracy of parametric monitoring devices during validation runs to ensure that the gauge or electronic read-out is a true reflection of conditions inside the treatment unit;

d. A description of how the results will be interpreted and documented; and

e. Identification of who will conduct the validation testing.

7. A detailed description of the periodic challenge testing procedures used to evaluate the effectiveness of each treatment device under full loading, which meets the standards of 9VAC20-121-270 and includes:

a. Frequency of challenge testing to be performed;

b. Number, type, and location or placement of biological and thermochemical indicators, and other methods used to monitor operating parameters;

c. A description of how the results will be interpreted and documented;

d. Procedures used to address challenge test failures, including evaluating and correcting any issues with the treatment cycle and unit, and management of untreated regulated medical waste to include temporary storage or diversion to another approved facility for treatment or disposal; and

e. Procedures for reporting failing results of challenge testing to the department in accordance with 9VAC20-121-340.

8. Identification of all appropriate personal protective equipment, such as puncture and leak resistant gloves, safety glasses or face shield, protective coveralls or bib, protective footwear, and mask or respiratory protection as needed, and when the items are used to protect personnel.

9. Safety procedures used to minimize occupational exposure and prevent physical injury to operators during loading, unloading, and treatment cycle.

10. Procedures for handling and disposing of treated wastes, including packaging, labeling, and transport.

11. A copy of the [ ~~written agreement with each permitted solid waste management facility that will transfer, store, or dispose of the~~ ] treated waste [ disposal plan ] in accordance with 9VAC20-121-280 D.

F. A written emergency contingency plan that describes the organized, planned, coordinated courses of action to be followed in the event of emergencies and nonoperation. In addition to submission to the department, the plan shall be provided to the local police and fire departments, local emergency manager, and local emergency health coordinator. The plan shall include:

1. Procedures to minimize hazards to human health and the environment from utility failure, fires or explosions, spills, leaks and releases, and exposure to regulated medical waste.

2. A description of the actions facility personnel shall take in the event of various emergency situations (fire, explosion, catastrophic loss, temporary shutdown, release of regulated medical waste or regulated medical waste constituents, or other incident that could threaten human health or the environment), including evacuation procedures.

3. A list of available fire protection and emergency equipment, and appropriate uses, such as fire extinguishers, emergency safety showers, eye wash stations, spill control materials, and alarm systems.

4. Procedures to be employed in the event of equipment breakdown or maintenance events, including standby equipment, extension of operating hours, or diversion of waste to another facility.

5. A list of onsite and offsite backup equipment with names and telephone numbers where offsite equipment may be obtained.
6. Provisions for loading, unloading, storage, transfer, treatment, or other disposal capabilities to be used during emergency situations, including when the facility downtime exceeds 24 hours.
7. The designation of alternate treatment areas or plans for transfer of stored waste in the event facility or system downtime exceeds 72 hours.
8. Procedures for spill cleanup and decontamination following a release of regulated medical waste.
9. A description of arrangements made with the local police and fire department that allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of response personnel responding to an emergency situation.
10. The telephone numbers for local fire and police departments.
11. An identification of personnel designated as emergency coordinators. A list of names, addresses, and phone numbers (office and home) of all persons qualified to act as an emergency coordinator for the facility. Where more than one person is listed, one shall be named as primary emergency coordinator and the other shall be listed in the order in which they will assume responsibility as alternates. The emergency coordinator must be onsite or on-call and is responsible for responding to emergencies and coordinating emergency response measures.
12. A description of where and how emergency response information will be posted.

G. A written closure plan that identifies the steps necessary to completely close the facility or unit at its full operation under the permit conditions, which includes:

1. Procedures for removal of regulated medical waste, treated residue, and other materials for proper treatment or disposal;
2. Methods for cleaning and disinfecting the unit or facility and all related equipment, structures, and surfaces;
3. A description of any sampling to be conducted to ensure the facility has been decontaminated;
4. A schedule for final closure including, as a minimum, the anticipated date when wastes will no longer be received, the date when completion of final closure is anticipated, and intervening milestone dates that will allow tracking of the progress of closure; and
5. Actions necessary for facility abandonment or uses other than for regulated medical waste management.

**9VAC20-121-340. Recordkeeping and reporting required of a permittee.**

A. Regulated medical waste management facilities having coverage under a permit-by-rule shall maintain and retain records and reports as required by this chapter.

B. A facility shall retain records whenever monitoring is required.

1. The facility shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, for at least three years from the sample or measurement date. The director may request that this period be extended.
2. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurements;
  - b. The name of the individuals who performed the sampling or measurements;
  - c. The date analysis were performed;
  - d. The name of the individuals who performed the analysis;
  - e. The analytical techniques or methods used; and
  - f. The results of such analyses.

C. The facility must maintain accurate written [ or digital ] records as required by this chapter. Records shall include all records required by the facility permit, this chapter, or other applicable regulations. Records must be maintained at the facility or another location approved by the department for at least three years from the date of the record, sample or measurement date, treatment date, shipping date, or receipt date. The department may request that this period be extended. Records shall be available for review by the department as requested.

D. The facility shall maintain a regulated medical waste management plan in the operating record in accordance with 9VAC20-121-330.

E. The owner or operator of a regulated medical waste management facility under a permit-by-rule that transfers or treats regulated medical waste, except for a captive regulated medical waste management facility, shall submit a Solid Waste Information and Assessment report to the department by March 31 of

each year in accordance with 9VAC20-81-80.

F. A disclosure statement identifying all key personnel as required by § 10.1-1408.1 of the Code of Virginia shall be on file with the department and updated on a quarterly basis as necessary. At least one operator listed as key personnel on the facility's disclosure statement shall be licensed by the Board for Waste Management Facility Operators as required by § 10.1-1408.2 of the Code of Virginia.

G. If regulated medical waste is received from offsite, records shall be maintained for three years following receipt of the waste and shall include the date of receipt, name of each offsite generator, transporter, type and quantity (weight or volume) of waste received, and dates of subsequent treatment onsite or shipment offsite. The facility shall maintain a signed certificate, contract, or equivalent document for each load or inclusive of all loads received from offsite in which the generator affirms that the load does not contain hazardous waste or radioactive materials, unless the facility is permitted to receive those types of wastes.

H. If regulated medical waste is shipped or transferred offsite, the facility shall maintain records, including copies of all shipping papers, specifying the date of shipment, type, and quantity (weight or volume) of waste removed from the site and the names, addresses, and telephone numbers of both the transporters and the destination facility receiving the shipments for treatment or disposal.

I. A regulated medical waste treatment facility shall maintain an onsite treatment log at each treatment unit that is complete for the preceding three-year period. The log shall record the date, start time, end time, and operator of each treatment cycle; the type and quantity (weight or volume) of regulated medical waste treated onsite; monitoring records for the operating parameters (e.g. time, temperature, pressure, and chemical concentration) achieved throughout each treatment cycle; and the results of all validation and periodic challenge testing. Monitoring records shall include original recordings for continuous monitoring instrumentation and parametric controls as well as the results of all biological and thermochemical indicators. Where multiple treatment units are used, a working log can be maintained at each unit and such logs periodically consolidated at a central location as long as the records distinguish which treatment unit is applicable to each record. The consolidated logs shall be retained for three years and be available for review.

J. The facility shall retain records of all unauthorized waste in accordance with 9VAC20-121-230 K.

K. The facility must maintain a record of self-inspections in an inspection log. The log must include the date and time of the inspection, the name of the inspector, a description of the inspection, including the identity of the specific equipment and structures inspected, observations recorded, and the date and nature of any remedial actions implemented or repairs made.

L. Written documentation of all training received by each employee, including the date and topics of the training, shall be maintained in the facility's operating record.

M. A regulated medical waste management facility shall be subject to the following reporting requirements. The facility shall report to the department any noncompliance, emergency, or unusual condition that may endanger health, the environment, or the facility's operation. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the facility becomes aware of the circumstances. The written report shall contain a description of the circumstances and its cause; the period of occurrence, including exact dates and times; and if the circumstance has not been corrected, the anticipated time it is expected to continue. It shall also contain steps taken or planned to reduce, eliminate, and prevent reoccurrence of the circumstances resulting in an unusual condition or noncompliance, to include retraining of staff as necessary. Reportable conditions include:

1. Any interruption to operations that requires implementation of the facility's emergency contingency plan or diversion of regulated medical waste to another management facility;
2. Releases or discharges of regulated medical waste from a fire, explosion, storm, or other emergency that could endanger human health or the environment outside the facility;
3. Unauthorized discharge of effluent, wash water, waste, or other pollutant to surface water (i.e., offsite, natural water body or tributary, including wetlands);
4. Spills of regulated medical waste in any areas not protected from the elements, such as outside of a building;
5. Storage of regulated medical waste beyond capacity or storage timeframes;
6. Failing results of periodic challenge testing;
7. Receipt or discovery of unauthorized waste;
8. Receipt of Category A waste; and
9. Shipment of regulated medical waste offsite in inappropriate packaging.

N. Copies of all reports required and records of all data used to complete the permit-by-rule application must be retained for at least three years from the date of the report or application. The director may request

that this period be extended.

O. When the permittee becomes aware that the permittee failed to submit any relevant facts or submitted incorrect information in a permit-by-rule application or in any report to the department, the permittee shall promptly submit such omitted facts or the correct information with an explanation.

## Part VI

### Variance Application Procedures

#### **9VAC20-121-400. General.**

A. Any person affected by this chapter may apply to the department for a variance from any requirement of this chapter. Variance determinations shall be subject to the provisions of the Virginia Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

B. The department shall not accept any variance application relating to:

1. Equivalent testing or analytical methods contained in EPA Publication SW-846;
2. A change in the regulatory requirements that the applicant is currently violating until such time as the violation has been resolved through the enforcement process.

#### **9VAC20-121-410. Variance to requirements.**

A. The director may grant a variance from any regulation contained in Part III (9VAC20-121-20 et seq.) through Part V (9VAC20-121-300 et seq.) of this chapter to an applicant if the applicant demonstrates to the satisfaction of the director that:

1. a. Strict application of the regulation to the facility will result in undue hardship that is caused by the applicant's particular situation;
  - b. The alternate is equally protective of human health and the environment as that provided for in the regulations; or
  - c. Technical conditions exist that make a strict application of the regulation difficult to achieve; and
2. Granting the variance will not result in an unreasonable risk to the public health or the environment.

B. Effects of the decisions.

1. When the director renders a decision under this section in accordance with the procedures contained in 9VAC20-121-420, the director may:
  - a. Deny the application;
  - b. Grant the variance as requested; or
  - c. Grant a modified or partial variance.
2. When a variance is granted, the director may:
  - a. Specify the termination date of the variance; or
  - b. Include a schedule for:
    - (1) Compliance, including increments of progress, by the facility with each requirement of the variance; and
    - (2) Implementation by the facility of such control measures as the director finds necessary in order that the variance may be granted.

#### **9VAC20-121-420. Administrative procedures.**

A. Persons requesting variance from a provision of this chapter shall submit an application for such variance in accordance with this section.

1. All applications submitted to the director shall include:
  - a. The applicant's name and address;
  - b. A statement of applicant's interest in the proposed action;
  - c. A description of the desired action and a citation to the regulation from which a variance is requested;
  - d. A description of the need and justification for the proposed action;
  - e. The duration of the variance, if applicable;
  - f. The potential impact of the variance on public health or the environment;
  - g. Other information believed by the applicant to be pertinent; and

h. The following statements signed by the applicant or his authorized representative:

"I certify that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. In addition to the general information required of all applicants under this part:

a. To be successful the applicant shall address the applicable standards and criteria;

b. An explanation of the applicant's particular situation that prevents the facility from achieving compliance with the cited regulation; and

c. Other information as may be required by the department.

B. The variance application shall be processed in accordance with this subsection.

1. After receiving an application that includes the information required in subsection A of this section, the director will determine whether the information received is sufficient to render the decision. If the information is deemed to be insufficient, the director will request that additional information be furnished.

2. The applicant may submit the additional information requested or may demonstrate that the additional information should not be required. If the director agrees that the additional information should not be required, the director will act in accordance with subdivision 3 of this subsection.

3. After the application is deemed complete:

a. The director will make a tentative decision to grant or deny the variance request.

b. If the variance request is tentatively denied, the director will offer the applicant the opportunity to withdraw the request, submit additional information, or proceed with the evaluation.

c. The director will issue a notice tentatively granting the variance request. Notification of this tentative decision will be provided by newspaper advertisement in the locality where the applicant is located. The director will accept comment on the tentative decision for 30 days.

d. After evaluating all public comments, the director will, within 15 days after the expiration of the comment period:

(1) Notify the applicant of the final decision; and

(2) Notify all persons who commented on the tentative decision.

C. Decision resolution.

1. In the case of a denial, the applicant has a right to request a formal hearing to challenge the rejection.

2. If the director grants a variance request, the notice to the applicant shall provide that the variance may be terminated upon a finding by the director that the applicant has failed to comply with any variance requirements.

## FORMS (9VAC20-121)

[Solid Waste Management Facility Permit Applicant's Disclosure Statement \(Cover Sheet\), DEQ Form DISC 01 \(rev. 9/2020\)](#)

[Solid Waste Management Facility Permit Applicant's Disclosure Statement - Key Personnel Statement, DEQ Form DISC 02 \(rev. 9/2020\)](#)

[Local Government Certification Request, DEQ Form CERT 01 \(rev. 8/2018\)](#)

[Regulated Medical Waste Management Facility Permit-by-Rule Form, DEQ Form RMW PBR \(eff. 1/2022\)](#)

[Application for Evaluation and Approval of Regulated Medical Waste Treatment Technology, DEQ Form RMWTP 01 \(rev. 9/2018\)](#)

## Documents Incorporated by Reference (9VAC20-121)

~~[Managing Solid Waste Contaminated with a Category A Infectious Substance \(August 2019\), approved for publication by the National Security Council \(NSC\)-led Domestic Resilience Group \(DRG\) on August 19, 2019.](#)~~

[Managing Solid Waste Contaminated with a Category A Infectious Substance \(June 2022\), approved for publication by the National Security Council \(NSC\)-led Domestic Resilience Group \(DRG\) on June 3, 2022](#)

# Tab E



*Commonwealth of Virginia*

***VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY***

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

P.O. Box 1105, Richmond, Virginia 23218

(800) 592-5482 FAX (804) 698-4178

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Travis A. Voyles  
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus  
Director  
(804) 698-4020

Memorandum

To: Virginia Waste Management Board Members

Through: Kathryn Perszyk, Director, Land Protection and Revitalization Division *KJP*

From: Stephanie Bellotti, Senior Regulation and Guidance Coordinator, Division of Water Planning

Date: September 6, 2022

Subject: Virginia Solid Waste Management Regulations, 9VAC20-81 et seq.  
Request for Final Adoption of Amendment 9

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**I. Introduction**

At the October 28, 2022 meeting of the Virginia Waste Management Board (Board), the Department will request the Board to adopt final amendments to the Virginia Solid Waste Management Regulations, (9VAC20-81 et seq.). The proposed amendments are necessary to address issues that have arisen since the regulation was last amended. The purpose of this amendment is to improve standards for the siting, operation and monitoring of landfills and revise the open burning exemptions to be more protective of human health and the environment.

**II. Statutory Authority**

Section 10.1-1402 (11) of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate and enforce regulations. Section 10.1-1408.1 of the Code of Virginia requires that a permit be obtained to conduct nonhazardous solid waste disposal, treatment or storage activities.

The corresponding federal authority for the criteria for municipal solid waste landfills is located in 40 CFR Parts 257 and 258.

**III. Background**

A periodic review of the Solid Waste Management Regulations was conducted in 2019. This amendment 9 was initiated in response to the periodic review's recommendation to amend the regulation. Additionally, in August 2019, the Office of the Secretary of Natural and Historic Resources released a final report to Governor Ralph Northam in response to the Governor's Executive Order 6 (2018) recommending areas in which this regulation should be amended.

**IV. Regulatory Process**

A Notice of Intended Regulatory Action (NOIRA) was published in the Virginia Register on February 15, 2021. During the comment period, comments in support of updating the Regulations were submitted by five commenters.

At the October 8, 2021, Board meeting, the proposed regulatory amendment was approved for public comment. After receiving approval from the Governor, the proposed regulatory amendment and notice announcing the public comment period was published in the Virginia Register on February 14, 2022. The public comment period ended on May 16, 2022. There were 40 commenters on the proposed amendment. A summary of the comments received and DEQ's responses is provided in the attached TH-03 document. Based on the DEQ's review of the public comments, several changes to the proposal were made.

#### **V. Final Amendments to the Regulation**

Substantive revisions to the Virginia Solid Waste Management Act include:

The regulations are being amended to strengthen some requirements to be more protective of human health and the environment, to clarify some existing requirements, to address recommended regulatory changes in the Secretary of Natural and Historic Resources' report to Governor Ralph Northam in response to Executive Order 6 (2018), and to include editorial corrections. The main goals of this amendment are to improve standards for the siting, operation and monitoring of landfills and revise the open burning exemptions to be more protective of human health and the environment.

Some of the major areas in which the regulations are being revised include the following:

##### **Landfill Siting**

Changes are being made to the landfill siting criteria in response to the Secretary of Natural and Historic Resources' report to Governor Ralph Northam in response to Executive Order 6 (2018). The report recommended that the regulations be revised to update provisions related to setbacks and siting of solid waste facilities, as well as solid waste facility leachate pollution. Terminology used in the regulation pertaining to the siting setbacks is being updated to use the term "waste management boundary" to eliminate confusion by clarifying that the siting requirements for landfills apply to the locations where waste and leachate will be managed, not the entire parcel of the property. Changes have been made to clarify that the siting requirements apply to new and expanded waste management boundaries. The setback distance from the waste management boundary to the facility boundary is being increased from 50 feet to 100 feet, in response to consensus from the RAP. The distance from the waste management boundary to any residence, school, daycare center, hospital, nursing home, or recreational park area in existence at the time of application is also being increased from 200 feet to 500 feet. These changes will create a larger buffer between the waste management boundary and development on properties adjacent to the landfill. The additional buffer from the waste management boundary is consistent with the requests received from the public for an increased buffer space to be placed around landfills and is consistent with the increased setback distances found in surrounding states. The increase to the setback distances will potentially reduce noise and odor concerns, as well as provide more protection to adjacent properties from potential subsurface methane gas migration. The regulation is also being amended in response to RAP consensus to state that a new or expanded waste management boundary will not be sited or constructed in any locally designated resource protection area as defined in 9VAC25-830-80 unless it has been approved by the locality pursuant to the requirements of 9VAC-830-10 et. seq including 9 VAC25-830-150.

##### **Landfill Operations**

A new requirement is being included in the regulation for active landfills to conduct a periodic topographic survey. The surveys will provide more accurate and updated information to the facility and the department on the current capacity and grades of the fill area, the remaining life of the landfill, and assist with planning for future landfill capacity. Survey reports will supplement and validate information provided in Solid Waste Information and Assessment (SWIA) reports. This requirement will also help to ensure that the final elevations of the landfill are as permitted and will prevent the overfilling of landfills from occurring. Landfills receiving fewer quantities of waste (those with a permitted daily disposal limit of 300 tons per day or less) are only required to conduct the survey on a biennial basis (once every 24 months) whereas all other landfills must survey and report on an annual basis (once every 12 months). Some landfills are already required by their permit to conduct these surveys. This language was drafted in consideration of RAP discussion and feedback.

A requirement for weekly cover to be applied over exposed waste at active industrial landfills is being added to the regulation. Currently the regulation states that these facilities are to provide “periodic cover,” which is not defined in the regulation. The absence of a requirement to provide cover at a specified frequency has resulted in working face areas not being minimized, and waste material is being exposed to the environment for longer periods of time. The department has observed an increase in the number and severity of occurrences of fires, odors, blowing litter, stormwater infiltration, excess leachate generation, surface and subsurface erosion of waste, and releases of waste and leachate at industrial landfills. The new requirement is proposed in order to be more protective of human health and the environment and provides consistency with the weekly cover requirement for CDD landfills. In consideration of RAP discussion and feedback, the amended regulation recognizes that the nature, type, and quantity of accepted wastes are unique to each industrial landfill and allows the department to evaluate alternate methods proposed by the facility to address the same performance standards.

#### Landfill Gas Monitoring

An additional requirement is being added for landfills to notify properties with occupied structures within 500 feet of gas compliance level exceedances (i.e. methane gas detected at or above the lower explosive limit) in the perimeter gas monitoring network. Landfill gas may migrate subsurface, and the goal is to keep those on neighboring properties informed concerning the potential for the subsurface migration of methane and safety risks related to explosive gases. Facilities will be required to offer to monitor inside nearby offsite structures for elevated levels of methane after an exceedance is detected in the perimeter gas monitoring network. The RAP achieved consensus on adding these requirements to the regulation.

#### Landfill Groundwater Monitoring

Revisions to the groundwater monitoring section for all landfills are being proposed to prepare for the addition of any MCLs established for PFAS and other emerging contaminants by the Virginia Department of Health (VDH). Chapter 1097 of the 2020 Acts of Assembly modified §32.1-169 of the Code of Virginia on January 1, 2022 and directed the State Board of Health to “*adopt regulations establishing maximum contaminant levels (MCLs) in all water supplies and waterworks in the Commonwealth for (i) perfluorooctanoic acid and perfluorooctane sulfonate, and for such other perfluoroalkyl and polyfluoroalkyl substances as the Board deems necessary; (ii) chromium-6; and (iii) 1,4-dioxane.*” In anticipation of these new MCLs, this amendment proposes the addition of a new column, Column C, to Table 3.1. Column C lists emerging constituents that VDH is directed to establish MCLs for in the future in response to §32.1-169 of the Code of Virginia. The content of Column C can be modified in the future if necessary, based on the actions taken by VDH to adopt MCLs for emerging constituents. MCLs must be adopted by VDH before this regulation will be amended to require monitoring for these constituents; however, this information has been included in this amendment to provide a framework for these additional monitoring constituents and to provide the regulated community with insight concerning how these new MCLs would be incorporated in monitoring requirements for solid waste disposal facilities. The RAP was in agreement with the proposed addition of Column C and framework to address the potential monitoring of emerging contaminants. The regulations are also proposing to allow other test methods other than EPA’s SW-846 methods for constituents listed in Column C of Table 3.1 in response to RAP feedback. Once final MCLs are adopted by VDH, Column C will be updated, if necessary, for consistency with MCLs adopted by VDH, and monitoring for constituents listed in Column C would be required for all landfills.

#### Open Burning Exemptions

This amendment removes language that previously allowed citizens to dispose of their household solid waste through open burning of waste on their property if regularly scheduled collection services were not available at the adjacent road. Under the amended regulation, only vegetative waste, clean wood and clean paper products will be allowed to be open burned on private property when no regular collection services are available. This change is being made in response to the Secretary of Natural and Historic Resources’ report to Governor Ralph Northam in response to Executive Order 6. The report recommended that the regulations be revised to eliminate or significantly reduce the open burning of household solid waste. Combustion of materials commonly found in

household waste is well documented to cause release of carcinogenic compounds, and the smoke and odors from the burning of household waste may be a nuisance to adjacent property owners. This change is more protective of human health and the environment. Other open burning exemptions are also being modified to be consistent with open burning requirements for Volatile Organic Compound (VOC) Emissions Control Areas found in regulations adopted by the State Air Pollution Control Board.

Other Changes

Minor clarifications and revisions have been made to the regulations, and some regulatory requirements have been re-organized as part of this amendment. Operational requirements applicable to non-landfill facilities have been clarified and consolidated where possible to assist the regulated community with understanding the requirements of the regulation.

Changes are being made to the regulation to further promote composting activities. Additional exemptions from permitting have been added to the regulation for certain composting activities on farms as well as composting activities performed in conjunction with a public/private event or festival. The agency is also proposing to remove the requirement for compost facilities to conduct parasite testing as historical data has demonstrated that parasites have not posed issues with final compost quality.

The regulation is also being revised to require closure cost estimates to include the costs related to the removal of stockpiled beneficial use materials at a facility in response to the Secretary of Natural and Historic Resources' report to Governor Ralph Northam in response to Executive Order 6. The report recommended that the regulations be revised to ensure that facilities provide adequate financial assurance that they can fund cleanup and closure. This amendment will require facilities' closure cost estimates to include costs for removal of beneficial use materials (which were not included previously) when calculating the financial assurance a facility is required to provide for closure of the facility. This change protects the citizens of the Commonwealth from having to pay for the removal and disposal of beneficial use material if a facility fails to properly close.

Specific amendments to language as a result of comments received during the proposed regulatory stage are specifically identified in the attached Draft Final Regulation Agency Background Document (TH-03).

**VI. Staff Recommendation**

After making a presentation on the proposed amendment and answering any questions the Board may have, staff will ask the Board to adopt (VAC20-81 et seq.) as a final regulation.

**VII. Contact Information**

Kathryn Perszyk, Director, Land Protection and Revitalization Division  
(804) 698-4047

Kathryn.Perszyk@deq.virginia.gov

**VIII. Attachments**

- Draft Final Regulation Agency Background Document (TH-03)
- Economic Impact Assessment and Spreadsheet
- Amendment 9 (9VAC20-81 et seq.) Final Regulatory Text



[townhall.virginia.gov](http://townhall.virginia.gov)

## Final Regulation Agency Background Document

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-81 et seq.
<b>VAC Chapter title(s)</b>	Solid Waste Management Regulations
<b>Action title</b>	Amendment 9
<b>Date this document prepared</b>	September 6, 2022

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Order 19 (2022) (EO 19), any instructions or procedures issued by the Office of Regulatory Management (ORM) or the Department of Planning and Budget (DPB) pursuant to EO 19, the Regulations for Filing and Publishing Agency Regulations (1 VAC 7-10), and the *Form and Style Requirements for the Virginia Register of Regulations and Virginia Administrative Code*.

### Brief Summary

*Provide a brief summary (preferably no more than 2 or 3 paragraphs) of this regulatory change (i.e., new regulation, amendments to an existing regulation, or repeal of an existing regulation). Alert the reader to all substantive matters. If applicable, generally describe the existing regulation.*

The Virginia Solid Waste Management Regulations, 9VAC20-81 et seq., establish standards and procedures for the siting, design, construction, operation, maintenance, closure, and post-closure care of solid waste management facilities in the Commonwealth. It also establishes standards and procedures pertaining to the management of solid wastes.

### Acronyms and Definitions

*Define all acronyms used in this form, and any technical terms that are not also defined in the "Definitions" section of the regulation.*

ACL- alternate concentration limit  
CDD- Construction demolition debris  
CFR- Code of Federal Regulations  
EOX- extractable organic halides  
MCL- maximum contaminant levels  
NOIRA- Notice of Intended Regulatory Action  
PFAS- per- and polyfluoroalkyl substances  
RAP- Regulatory Advisory Panel  
SWIA- Solid Waste Information and Assessment  
TOX- total organic halides  
VDH- Virginia Department of Health  
VOC- Volatile Organic Compound

### Statement of Final Agency Action

*Provide a statement of the final action taken by the agency including: 1) the date the action was taken; 2) the name of the agency taking the action; and 3) the title of the regulation.*

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At the October 28, 2022, Board meeting the Virginia Waste Management Board took final action to adopt a new Solid Waste Management Regulation (9VAC20-81 et seq.). The regulatory action is to be effective as provided in the Administrative Process Act.

### Mandate and Impetus

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding the mandate for this regulatory change, and any other impetus that specifically prompted its initiation. If there are no changes to previously reported information, include a specific statement to that effect.*

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There are no changes to the mandate for this regulation.

### Legal Basis

*Identify (1) the promulgating agency, and (2) the state and/or federal legal authority for the regulatory change, including the most relevant citations to the Code of Virginia and Acts of Assembly chapter number(s), if applicable. Your citation must include a specific provision, if any, authorizing the promulgating agency to regulate this specific subject or program, as well as a reference to the agency's overall regulatory authority.*

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The promulgating agency is the Virginia Waste Management Board.

Section 10.1-1402 (11) of the Code of Virginia authorizes the Virginia Waste Management Board to promulgate and enforce regulations. Section 10.1-1408.1 of the Code of Virginia requires that a permit be obtained to conduct nonhazardous solid waste disposal, treatment or storage activities.

The corresponding federal authority for the criteria for municipal solid waste landfills is located in 40 CFR Parts 257 and 258.

**Purpose**

*Explain the need for the regulatory change, including a description of: (1) the rationale or justification, (2) the specific reasons the regulatory change is essential to protect the health, safety, or welfare of citizens, and (3) the goals of the regulatory change and the problems it is intended to solve.*

The Virginia Solid Waste Management Regulations, 9 VAC 20-81, establish standards and procedures for the siting, design, construction, operation, maintenance, closure, and post-closure care of solid waste management facilities in the Commonwealth. It also establishes standards and procedures pertaining to the management of solid wastes. The proposed amendments are necessary to addresses issues that have arisen since the regulation was last amended.

Public comments were submitted during the 2019 periodic review of this regulation and during the Notice of Intended Regulatory Action comment period. Many of those comments recommended changes to the regulations. Additionally, changes to the regulation were recommended as a result of the August 2019 final report from the Office of the Secretary of Natural and Historic Resources to Governor Ralph Northam in response to the Governor Ralph Northam’s Executive Order 6 (2018). The regulations are being amended to strengthen some requirements to be more protective of human health and the environment, to clarify some existing requirements, to address recommended regulatory changes in the Secretary of Natural and Historic Resources’ report to the Governor Ralph Northam in response to Executive Order 6 (2018), and to include editorial corrections.

The goal of this amendment is to improve standards for the siting, operation and monitoring of landfills and revise the open burning exemptions to be more protective of human health and the environment.

Public Comments were submitted from February 14, 2022, through May 16, 2022, during the proposed regulatory stage. Comments were received from 40 commenters, and included 126 comments. Many of these comments recommended minor changes to the proposed regulation. These comments have been considered by Agency staff and incorporated, as appropriate, into the proposed regulation.

**Substance**

*Briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the “Detail of Changes” section below.*

The regulations are being amended to strengthen some requirements to be more protective of human health and the environment, to clarify some existing requirements, to address recommended regulatory changes in the Secretary of Natural and Historic Resources’ report to Governor Ralph Northam in response to Executive Order 6 (2018), and to include editorial corrections. The main goals of this amendment are to improve standards for the siting, operation and monitoring of landfills and revise the open burning exemptions to be more protective of human health and the environment.

Some of the major areas in which the regulations are being revised include the following:

Landfill Siting

Changes are being made to the landfill siting criteria in response to the Secretary of Natural and Historic Resources’ report to Governor Ralph Northam in response to Executive Order 6 (2018). The report recommended that the regulations be revised to update provisions related to setbacks and siting of solid

waste facilities, as well as solid waste facility leachate pollution. Terminology used in the regulation pertaining to the siting setbacks is being updated to use the term “waste management boundary” to eliminate confusion by clarifying that the siting requirements for landfills apply to the locations where waste and leachate will be managed, not the entire parcel of the property. Changes have been made to clarify that the siting requirements apply to new and expanded waste management boundaries. The setback distance from the waste management boundary to the facility boundary is being increased from 50 feet to 100 feet, in response to consensus from the RAP. The distance from the waste management boundary to any residence, school, daycare center, hospital, nursing home, or recreational park area in existence at the time of application is also being increased from 200 feet to 500 feet. These changes will create a larger buffer between the waste management boundary and development on properties adjacent to the landfill. The additional buffer from the waste management boundary is consistent with the requests received from the public for an increased buffer space to be placed around landfills and is consistent with the increased setback distances found in surrounding states. The increase to the setback distances will potentially reduce noise and odor concerns, as well as provide more protection to adjacent properties from potential subsurface methane gas migration. The regulation is also being amended in response to RAP consensus to state that a new or expanded waste management boundary will not be sited or constructed in any locally designated resource protection area as defined in 9VAC25-830-80.

#### Landfill Operations

A new requirement is being included in the regulation for active landfills to conduct a periodic topographic survey. The surveys will provide more accurate and updated information to the facility and the department on the current capacity and grades of the fill area, the remaining life of the landfill, and assist with planning for future landfill capacity. Survey reports will supplement and validate information provided in Solid Waste Information and Assessment (SWIA) reports. This requirement will also help to ensure that the final elevations of the landfill are as permitted and will prevent the overfilling of landfills from occurring. Landfills receiving fewer quantities of waste (those with a permitted daily disposal limit of 300 tons per day or less) are only required to conduct the survey on a biennial basis (once every 24 months) whereas all other landfills must survey and report on an annual basis (once every 12 months). Some landfills are already required by their permit to conduct these surveys. This language was drafted in consideration of RAP discussion and feedback.

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#### Landfill Gas Monitoring

An additional requirement is being added for landfills to notify properties with occupied structures within 500 feet of gas compliance level exceedances (i.e. methane gas detected at or above the lower explosive limit) in the perimeter gas monitoring network. Landfill gas may migrate subsurface, and the goal is to keep those on neighboring properties informed concerning the potential for the subsurface migration of methane and safety risks related to explosive gases. Facilities will be required to offer to monitor inside nearby offsite structures for elevated levels of methane after an exceedance is detected in the perimeter gas monitoring network. The RAP achieved consensus on adding these requirements to the regulation.

#### Landfill Groundwater Monitoring

Revisions to the groundwater monitoring section for all landfills are being proposed to prepare for the addition of any MCLs established for PFAS and other emerging contaminants by the Virginia Department

of Health (VDH). Chapter 1097 of the 2020 Acts of Assembly modified §32.1-169 of the Code of Virginia on January 1, 2022 and directed the State Board of Health to “adopt regulations establishing maximum contaminant levels (MCLs) in all water supplies and waterworks in the Commonwealth for (i) perfluorooctanoic acid and perfluorooctane sulfonate, and for such other perfluoroalkyl and polyfluoroalkyl substances as the Board deems necessary; (ii) chromium-6; and (iii) 1,4-dioxane.” In anticipation of these new MCLs, this amendment proposes the addition of a new column, Column C, to Table 3.1. Column C lists emerging constituents that VDH is directed to establish MCLs for in the future in response to §32.1-169 of the Code of Virginia. The content of Column C can be modified in the future if necessary, based on the actions taken by VDH to adopt MCLs for emerging constituents. MCLs must be adopted by VDH before this regulation will be amended to require monitoring for these constituents; however, this information has been included in this amendment to provide a framework for these additional monitoring constituents and to provide the regulated community with insight concerning how these new MCLs would be incorporated in monitoring requirements for solid waste disposal facilities. The RAP was in agreement with the proposed addition of Column C and framework to address the potential monitoring of emerging contaminants. The regulations are also proposing to allow other test methods other than EPA’s SW-846 methods for constituents listed in Column C of Table 3.1 in response to RAP feedback. Once final MCLs are adopted by VDH, Column C will be updated, if necessary, for consistency with MCLs adopted by VDH, and monitoring for constituents listed in Column C would be required for all landfills.

#### Open Burning Exemptions

This amendment removes language that previously allowed citizens to dispose of their household solid waste through open burning of waste on their property if regularly scheduled collection services were not available at the adjacent road. Under the amended regulation, only vegetative waste, clean wood and clean paper products will be allowed to be open burned on private property when no regular collection services are available. This change is being made in response to the Secretary of Natural and Historic Resources’ report to Governor Ralph Northam in response to Executive Order 6. The report recommended that the regulations be revised to eliminate or significantly reduce the open burning of household solid waste. Combustion of materials commonly found in household waste is well documented to cause release of carcinogenic compounds, and the smoke and odors from the burning of household waste may be a nuisance to adjacent property owners. This change is more protective of human health and the environment. Other open burning exemptions are also being modified to be consistent with open burning requirements for Volatile Organic Compound (VOC) Emissions Control Areas found in regulations adopted by the State Air Pollution Control Board.

#### Other Changes

Minor clarifications and revisions have been made to the regulations, and some regulatory requirements have been re-organized as part of this amendment. Operational requirements applicable to non-landfill facilities have been clarified and consolidated where possible to assist the regulated community with understanding the requirements of the regulation.

Changes are being made to the regulation to further promote composting activities. Additional exemptions from permitting have been added to the regulation for certain composting activities on farms as well as composting activities performed in conjunction with a public/private event or festival. The agency is also proposing to remove the requirement for compost facilities to conduct parasite testing as historical data has demonstrated that parasites have not posed issues with final compost quality.

The regulation is also being revised to require closure cost estimates to include the costs related to the removal of stockpiled beneficial use materials at a facility in response to the Secretary of Natural and Historic Resources’ report to Governor Ralph Northam in response to Executive Order 6. The report recommended that the regulations be revised to ensure that facilities provide adequate financial assurance that they can fund cleanup and closure. This amendment will require facilities’ closure cost estimates to include costs for removal of beneficial use materials (which were not included previously) when calculating the financial assurance a facility is required to provide for closure of the facility. This change protects the citizens of the Commonwealth from having to pay for the removal and disposal of beneficial use material if a facility fails to properly close.

## Issues

*Identify the issues associated with the regulatory change, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, include a specific statement to that effect.*

Many of the changes to the regulation provide additional protection to human health and the environment; therefore, the changes are advantageous to private citizens. Advantages to the public, as residential areas increasingly expand toward preexisting landfills, include improved safety and reduced odor in the vicinity of landfills. Increases to setback distances will help to provide a larger buffer between landfill activities and adjacent properties.

Private citizens will no longer be allowed to open burn their general household waste (except for vegetative waste, clean wood, and clean paper products), and they will need to arrange for their waste to be properly managed at a permitted solid waste management facility. This change should reduce nuisance complaints from neighbors concerning the impact open burning has on the air quality on neighboring properties.

Changes to compost-related requirements, such as additional compost activities exempt from permitting and elimination of certain testing requirements for permitted facilities will promote composting activities in the Commonwealth, reduce regulatory burden without posing risks to human health and the environment, and are advantageous to public and private entities, and well as the regulated community.

There are no disadvantages to the agency or the Commonwealth.

The addition of regulatory requirements will impact the regulated community. This includes local governments and private companies that operate landfills. The additional regulatory requirements pertaining to the following areas are added to the regulations to protect human health and the environment:

- Increased setback distances from waste management boundaries;
- Periodic topographic surveys of active landfills;
- Revised cover requirements for active industrial landfills to meet required performance standards;
- Notification and monitoring for neighbors in close proximity of landfill gas exceedances; and
- Groundwater monitoring of emerging contaminants, dependent upon actions taken by VDH.

These issues are all related to the proper siting, operation and monitoring of the landfill and protecting the safety of those in proximity of the landfill. Owners and operators of landfills will incur costs to comply with these requirements.

## Requirements More Restrictive than Federal

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding any requirement of the regulatory change which is more restrictive than*

*applicable federal requirements. If there are no changes to previously reported information, include a specific statement to that effect.*

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The RCRA Subtitle D program is not a program that is enforced directly by US EPA. The RCRA Subtitle D program includes a basic solid waste management program with many state options that are adopted and administered by the states. The Federal program has developed standards for facilities that are municipal solid waste management facilities. In addition to sanitary landfills, Virginia regulates CDD landfills, industrial landfills, incinerators and other solid waste facilities. The amendment maintains compatibility with Environmental Protection Agency (EPA) program approval for Subtitle D facilities and contains requirements for non-Subtitle D facilities, which are broader in scope than Federal requirements.

This amendment includes criteria that is specific to Virginia facilities. The siting setback distances for landfills are revised to increase the distance between the waste management boundary and the facility boundary, and to other features, such as residences, schools, daycare centers, hospitals, nursing homes, recreational park areas. This amendment also prohibits the siting of landfills in Resource Protection Areas that are designated by local governments. An annual topographic survey requirement is also included in this regulation to monitor the filling of landfills to ensure the landfills are constructed as originally designed and not overfilled. The requirements for monitoring and control of explosive landfill gas are revised to address notification and monitoring of occupied structures in close proximity to landfills where methane has been detected at or above the lower explosive limit at the facility boundary, in order to be more protective of public safety and human health. This amendment also addresses groundwater monitoring for PFAS. In Virginia, VDH has been directed to establish state MCLs for certain constituents. PFAS monitoring is not required by federal regulations, but is being studied by VDH, and this amendment has been written to be adaptable to respond to VDH activities pertaining to the emerging contaminants. These Virginia specific requirements have been added to provide additional protection to citizens of the Commonwealth from the operation of solid waste facilities as development of residential and commercial properties continues to expand closer to preexisting landfills.

**Agencies, Localities, and Other Entities Particularly Affected**

*List all changes to the information reported on the Agency Background Document submitted for the previous stage regarding any other state agencies, localities, or other entities that are particularly affected by the regulatory change. If there are no changes to previously reported information, include a specific statement to that effect.*

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**Other State Agencies Particularly Affected**

State agencies that choose to own or operate landfills will be impacted by the regulatory changes similar to all other public and private entities that choose to own or operate landfills. There is currently only one landfill owned or operated by a state agency; the landfill is closed and in post-closure care. Owners or operators of landfills may be required to conduct additional groundwater monitoring in response to actions taken by VDH to address emerging contaminants. Owners or operators of landfills will be required to notify and offer landfill gas monitoring for nearby properties if compliance level exceedances are detected within 500 feet of an occupied structure. State agencies that choose to own or operate non-landfill facilities will be minimally impacted by the regulatory changes. There is currently only one permitted non-landfill facility owned or operated by a state agency.

**Localities Particularly Affected**

Localities that choose to own or operate landfills will be impacted by the regulatory changes similar to all other public and private entities that choose to own or operate landfills. Owners or operators of active

landfills that accept more than 300 tons of waste per day will be required to conduct annual topographic surveys, while those accepting 300 tons per day or less will conduct these surveys every other year. Owners or operators of landfills may be required to conduct additional groundwater monitoring in response to actions taken by VDH to address emerging contaminants. Owners or operators of landfills will be required to notify and offer landfill gas monitoring for nearby properties if compliance level exceedances are detected within 500 feet of an occupied structure. Localities that choose to own or operate non-landfill facilities will be minimally impacted by the regulatory changes.

**Other Entities Particularly Affected**

Private citizens will no longer be allowed to open burn their general household waste (except for vegetative waste, clean wood, and clean paper products), and they will need to arrange for their waste to be properly managed at a permitted solid waste management facility. The reduction of open burning of household waste should improve air quality and reduce complaints from neighbors.

Private entities and federal agencies that choose to own or operate landfills will be impacted by the regulatory changes similar to all other public and private entities that choose to own or operate landfills. Owners or operators of active landfills that accept more than 300 tons of waste per day will be required to conduct annual topographic surveys while those accepting 300 tons per day or less will conduct these surveys every other year. Owners and operators of landfills may be required to conduct additional groundwater monitoring in response to actions taken by VDH to address emerging contaminants. Owners or operators of landfills will be required to notify and offer landfill gas monitoring for nearby properties if compliance level exceedances are detected within 500 feet of an occupied structure. Owners or operators of active industrial landfills will be required to provide weekly cover of waste unless alternate methods are approved to control fire, odor, and litter, minimize stormwater infiltration, and prevent erosion and displacement of waste. Currently periodic cover is required at industrial landfills, but the frequency of application is not defined. Private entities and federal agencies that choose to own or operate non-landfill facilities will be minimally impacted by the regulatory changes.

For purposes of "Locality Particularly Affected" under the Board's statutes:

This regulation is applicable statewide and no localities have been identified to be particularly impacted by these regulations.

**Periodic Review and Small Business Impact Review Report of Findings**

*If you are using this form to report the result of a periodic review/small business impact review that is being conducted as part of this regulatory action, and was announced during the NOIRA stage, indicate whether the regulatory change meets the criteria set out in EO 19 and the ORM procedures, e.g., is necessary for the protection of public health, safety, and welfare; minimizes the economic impact on small businesses consistent with the stated objectives of applicable law; and is clearly written and easily understandable. In addition, as required by § 2.2-4007.1 E and F of the Code of Virginia, discuss the agency's consideration of: (1) the continued need for the regulation; (2) the nature of complaints or comments received concerning the regulation; (3) the complexity of the regulation; (4) the extent to which the regulation overlaps, duplicates, or conflicts with federal or state law or regulation; and (5) the length of time since the regulation has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the regulation. Also, discuss why the agency's decision, consistent with applicable law, will minimize the economic impact of regulations on small businesses.*

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A periodic review of the Solid Waste Management Regulations was conducted in 2019. This amendment 9 was initiated in response to the periodic review's recommendation to amend the regulation. Additionally, in August 2019, the Office of the Secretary of Natural and Historic Resources released a final report to

Governor Ralph Northam in response to Governor Ralph Northam’s Executive Order 6 (2018) recommending areas in which this regulation should be amended.

**Public Comment**

*Summarize all comments received during the public comment period following the publication of the previous stage, and provide the agency’s response. Include all comments submitted: including those received on Town Hall, in a public hearing, or submitted directly to the agency. If no comment was received, enter a specific statement to that effect.*

Comm enter	Comment	Agency response
<p>Ryan Smith, Virginia Waste Industries Association (VWIA), and LaBella Associates</p>	<p>9VAC20-81-10. There is no term that specifically defines the area within the waste management boundary. Recommendation: Add the term "Waste Management Area" to define that part of the facility located within the waste management boundary and approved in the Part A application for the disposal of solid waste and storage of leachate.</p>	<p>The following areas are defined in 9 VAC20-81-10: facility boundary, waste management boundary and disposal unit boundary. "Facility boundary" means the boundary of the solid waste management facility. For landfills, this boundary encompasses the waste management boundary and all ancillary activities including scales, groundwater monitoring wells, gas monitoring probes, and maintenance facilities as identified in the facility's permit application. For facilities with a permit-by-rule (PBR) the facility boundary is the boundary of the property where the permit-by-rule activity occurs. For unpermitted solid waste management facilities, the facility boundary is the boundary of the property line where the solid waste is located. "Waste management boundary" means the vertical plane located at the boundary line of the area approved in the Part A application for the disposal of solid waste and storage of leachate. This vertical plane extends down into the uppermost aquifer and is within the facility boundary. "Disposal unit boundary" or "DUB" means the vertical plane located at the edge of the waste disposal unit. This vertical plane extends down into the uppermost aquifer. The DUB must be positioned within or coincident to the waste management boundary.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-98.B.4. Clarification is needed on how an "appropriate container" discussed in 9VAC20-81-98 differs from "container" as stated in the definitions (PVAC20-81-10). Appropriate containers are only directly referenced in the regulations when describing activities that are conditionally exempt</p>	<p>The "appropriate container" requirements in 9VAC20-81-98 were added to clarify the conditional exemption for managing solid waste at the site of generation or convenience center (9VAC20-81-95.D.10) and to clarify the conditional exemption for storing solid wastes from an emergency cleanup (9VAC20-81-95.D.20). Both conditional exemptions specifically reference the criteria for appropriate containers under 9VAC20-81-98, whereas the word "container" alone is used as defined by the regulation. The compost requirements under 9VAC20-81-330.B.1.a do not specifically reference the appropriate container criteria under 9VAC20-81-98; however, it is anticipated that non-compostable components would be stored in containers meeting the same criteria.</p>

	<p>from being classified as solid waste, and for facilities that will compost only Class I feedstocks. The statement that appropriate containers should be leak proof will provide a large burden to the waste industry. Specifically, if roll-off boxes are considered an appropriate container, they will not meet this requirement and facilities would be required to modify and or purchase new containers.</p>	<p>The Department agrees with this comment, and the text has been revised to replace "leak-proof" with "leak-resistant" for consistency with industry best practice.</p>
<p>Ryan Smith, VWIA</p>	<p>9VAC20-81-120.J.2. The set back requirement from airports is increased from 5 miles to 6 miles. There does not seem to be much back up for a small increase in setback like this, unless there is a safety provision or study regarding 6 miles we do not see the justification in this change. Recommendation: Keep the previous language of "Owners or operators proposing to site new or expanded waste management boundaries for a sanitary landfill and expansions of an existing landfill within a five-mile radius of any airport runway..."</p>	<p>The setback requirement from airports was increased to 6 miles to comply with the Wendell H. Ford Aviation Investment and Reform Act for the 21<sup>st</sup> Century (Ford Act), Pub. L. 106-181 (49 U.S.C. 44718, which prohibits the "construction or establishment" of new municipal solid waste landfills (MSWLFs) after April 5, 2000, within six miles of certain smaller public airports. This also agrees with the Federal Aviation Administration (FAA) advisory circular AC No. 150/5200-34A which provides guidance on 49 U.S.C. §44718(d). Section 44718(d), as amended, requires a minimum separation distance of six statute miles between a new MSWLF and a public airport. The FAA advisory circular outlines the safety issues of concern and basis for the FAA recommendations. [<a href="https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22095">https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/22095</a>].</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-120.A. Referring to siting the waste management boundary is vague and not completely accurate. Siting should refer to the area within the waste management boundary - see proposed term above ("Waste Management Area"). Recommendation: 1st sentence to read as follows: "The siting of the</p>	<p>As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: "The siting of <u>the waste management boundary</u> for all sanitary, CDD<sub>1</sub> and industrial landfills shall be governed by the standards set forth in this section."</p> <p>No change has been made to the regulation in response to this comment.</p>

	waste management area for all sanitary, CDD and industrial landfills shall be governed by the standards set forth in this section.”	
Ryan Smith, VWIA, and LaBella Associates	9VAC20-81-120.B. Same comment as above. Recommendation: Revise to read: "Floodplains. No new or expanded waste management area shall be sited in a 100-year floodplain."	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “No new <u>or expanded waste management boundary</u> shall be sited in a 100-year floodplain.”  No change has been made to the regulation in response to this comment.
Ryan Smith, VWIA, and LaBella Associates	9VAC20-81-120.C. Same comment as above. Recommendation: Revise to read: "Stable areas. New and expanded waste management areas shall be sited in geologically stable areas..."	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “New <u>and expanded waste management boundaries</u> shall be sited in geologically stable areas...”  No change has been made to the regulation in response to this comment.
Ryan Smith, VWIA, and LaBella Associates	9VAC20-81-120.D.2. Same comment as above. Recommendation: Revise to read: "No new or expanded waste management area shall be sited or constructed..."	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “No new <u>or expanded waste management boundary</u> shall be <u>sited or constructed...</u> ”  No change has been made to the regulation in response to this comment.
Ryan VWIA, and LaBella Associates	9VAC20-81-120.D.3.a. Same comment as above. Recommendation: Revise to read: "No new or expanded waste management area for a sanitary landfill shall be sited or constructed:"	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “No new <u>or expanded waste management boundary for a sanitary landfill</u> shall be <u>sited or constructed:...</u> ”  No change has been made to the regulation in response to this comment.
Ryan Smith, VWIA, and LaBella Associates	9VAC20-81-120.D.3.b. Same comment as above. Recommendation: Revise to read: "No new or expanded waste management area for a sanitary landfill shall be sited or constructed:"	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “No new <u>or expanded waste management boundary for a sanitary landfill</u> shall be <u>sited or constructed:...</u> ”  No change has been made to the regulation in response to this comment.
Ryan Smith,	9VAC20-81-120.E.1. Same comment as	As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: “No new <u>or expanded</u>

<p>VWIA, and LaBella Associates</p>	<p>above. Recommendation: Revise to read: "No new or expanded waste management area shall be located in areas where groundwater monitoring..."</p>	<p><u>waste management boundary</u> shall be located in areas where groundwater monitoring..."</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-120.F.1.a. Same comment as above. Recommendation: Revise to read: "New and expanded waste management areas for sanitary landfills other than those impacting..."</p>	<p>As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: "New <u>and expanded waste management boundaries</u> for sanitary landfills, other than those impacting..."</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-120.F.2. Same comment as above. Recommendation: Revise to read: "New and expanded waste management areas for CDD or industrial landfills shall not be located in wetlands..."</p>	<p>As noted, the waste management boundary is clearly defined in 9 VAC 20-81-10. This section states: "New <u>and expanded waste management boundaries</u> for CDD or industrial landfills shall not be located in wetlands..."</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-140.B.1. Sites must be managed by a licensed operator in the state of Virginia. Getting qualified site personnel to become a licensed operator can be difficult and take time, especially for some facilities that may have been recently acquired through acquisitions. Having the facility operate under the supervision or oversight of a licensed operator should be just as protective. Recommendation: Revise to read: "The facility shall operate under the supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators." or "The facility shall operate</p>	<p>The requirement for the facility to operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators is a statutory requirement, and the regulatory language is consistent with the statutory language (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly. In addition, 18VAC155-20-110.A.2 of the Department of Professional and Occupational Regulation's Waste Management Facility Operators Regulations (which is not part of this regulatory amendment) requires an individual operating a facility that is defined in 9VAC20-81-10 as a sanitary landfill, industrial waste landfill, or construction/demolition/debris (CDD) landfill, to hold a Class II license.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>under the oversight of a waste management facility operator licensed by the Board for Waste Management Facility Operators.”</p>	
<p>Ryan Smith, VWIA</p>	<p>9VAC20-81-140.B.21. The wording could be interpreted to require the survey be completed on the same day every year, or every other year, as applicable. This would be impractical. Recommendation: Revise to read: "Each landfill with a permitted daily disposal limit of more than 300 tons per day shall perform a topographic survey of the active portion of the landfill once each calendar year and within 305 to 425 days from the previous survey. Each landfill with a permitted daily disposal limit of 300 tons per day or less shall perform a topographic survey of the active portion of the landfill on a biennial basis and within 670 and 790 days from the previous survey."</p>	<p>The intent of the regulation is that the survey will be performed annually, at least once every 12 months, or biennially, at least once every 24 months. This verbiage is consistent with language utilized for the operations manual certification and is written to provide some flexibility. The desire is to have the survey performed roughly 12 (or 24) months apart but allow facilities flexibility to use a survey that may be performed for construction if within that timeframe. Note that if a survey is done earlier than 12 months (or 24 months), for example, the deadline for the next survey is calculated from the previous survey date.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA</p>	<p>9VAC20-81-140.B.21.C.(1)(c). Surface water infiltration is now a component for approving alternate daily cover. Again, not a lot of back up and we think this addition should be removed or further justified. Recommendation: Revise to read: "Daily cover consisting of at least six inches of compacted soil or other approved material shall be placed upon and maintained on all exposed solid waste prior to the end of each</p>	<p>The lack of daily cover or improper daily cover can lead to increased infiltration of stormwater within the landfill unit. Infiltration of stormwater can lead to increased leachate generation, leachate seeps and discharges to surface water. Based on observations by DEQ solid waste inspectors at various landfills across the state, the Department has determined it is important to include minimizing infiltration of stormwater in the list of daily cover requirements and associated alternate daily cover requirements.</p> <p>The regulation was changed from “control stormwater infiltration” to “minimize stormwater infiltration”.</p>

	<p>operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging." and "The use of an alternate daily cover shall cease if it is not effective in controlling disease vectors, fires, odors, blowing litter, and scavenging; if the use of the material results in nuisances; or if the material erodes and results in waste being exposed."</p>	
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-200.C.5.b. The language that "probe casings shall be capped or locked to prevent tampering and to protect the probes from exposure to the elements" is left to interpretation. Several facilities have existing probes that are capped by means of a screw cap on PVC pipe or just bolts on flush mount covers. While these are capped, it could be interpreted that it is open to tampering if it is not locked. Recommendation: Revise to read: "The probes shall be capped or locked to discourage tampering..." or "The probes shall be capped to discourage tampering..."</p>	<p>The Department agrees with this comment, and the text has been revised to replace the word "prevent" with "discourage" in order to clarify the requirement.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-200.D.2.d. This states that "Within 10 days of detection, provide written notification of the compliance level exceedance to adjacent property owners and occupants of occupied structures within 500 feet</p>	<p>The Department agrees with this comment, and the text has been revised to remove the word "adjacent." The Department has amended the language of this requirement to the following in order to clarify the requirement: "Within 10 days of detection, provide written notification of the compliance level exceedance to property owners and occupants of occupied structures within 500 feet of the exceeding probe or structure."</p>

	<p>of the exceeding probe or structure.” Does this only apply to adjacent properties or all properties within 500 feet of the exceeding probe. For some facilities located in more urban settings, there could be several properties and structures that are located with 500 feet but are not adjacent to the facility. We suggest revising the statement to be clear on which properties and occupants are to be notified.</p> <p>Recommendation: Revise to read: “Within 10 days of detection, provide written notification of the compliance level exceedance to all property owners and occupants of occupied structures within 500 feet of the exceeding probe or structure.” or “Within 10 days of detection, provide written notification of the compliance level exceedance to only adjacent property owners and occupants of occupied structures within 500 feet of the exceeding probe or structure.”</p>	
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-250.B.2.a.(1).(a). It is not possible to collect eight (or more) independent samples during a semi-annual sampling period. Recommendation: Revise to read: "For facilities that monitor groundwater on a semi-annual basis, a minimum of eight independent samples from each well (background and</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA’s 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA’s current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility’s Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities</p>

	<p>downgradient) shall be collected and analyzed for the Table 3.1 Columns A and C constituents prior to the facility becoming active through the first semi-annual sampling period."</p>	<p>would have to meet based on the highly variable geology of the Commonwealth.</p> <p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Landfills located within the Commonwealth are conducting groundwater sampling pursuant to their site specific timeframes. It is best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA's 2009 Unified Statistical Guidance document.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-250.B.2.(1).(b). It is not possible to collect four (or more) independent samples within a quarterly period. Recommendation: Revise to read: "For facilities that monitor groundwater on a quarterly basis as a result of subdivision 1 e of this subsection, a minimum of four independent samples from each well (background and downgradient) shall be collected and analyzed for the Table 3.1 Columns A and C constituents prior to the facility becoming active through the first quarterly sampling period."</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA's 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA's current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility's Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities would have to meet based on the highly variable geology of the Commonwealth.</p> <p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Landfills located within the Commonwealth are conducting groundwater sampling pursuant to their site specific timeframes. It is best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA's 2009 Unified Statistical Guidance document.</p>

		<p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-250.B.2.a.(1).(a) and 9VAC20-81-250.C.2.b.(2). Regulation does not specify if/when background calculations should be submitted to the department for Sanitary Landfills. 9VAC20-81-250.B.2.a(4) references the recalculation of site background. It is unclear if the initial background calculations and subsequent recalculations should be submitted independently or as part of Groundwater Monitoring Reports.</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA's 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA's current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility's Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities would have to meet based on the highly variable geology of the Commonwealth.</p> <p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Landfills located within the Commonwealth are conducting groundwater sampling pursuant to their site specific timeframes. It is best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA's 2009 Unified Statistical Guidance document.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-250.B.2.a.(4). Is there a limitation on the age of the data from background wells that can be included in the recalculation of site background every four years? Is there a limit of the number of data points that can be included? We have received conflicting feedback from reviewers</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA's 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA's current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility's Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities would have to meet based on the highly variable geology of the Commonwealth.</p>

	<p>at the Department on these questions.</p>	<p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Landfills located within the Commonwealth are conducting groundwater sampling pursuant to their site specific timeframes. It is best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA's 2009 Unified Statistical Guidance document.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-250.B.3.f and 9VAC20-81-250.C.3.f.(1). The added language of "at all downgradient compliance wells" seems excessive, particularly at sites with large monitoring networks. There is a possibility that one or more wells in Assessment monitoring could show concentrations of all Table 3.1 Columns B and C constituents at or below background values for a long period of time before all of the downgradient compliance wells show similar concentrations. We have had requests approved in the past to move a single well from an Assessment subset of wells to a Detection subset of wells based on all Table 3.1 Columns B (and now C) constituents being detected at or below background values for two consecutive Table 3.1</p>	<p>The comment initially concerns the regulatory clarification language added (e.g., "all") but, additionally discusses the Well Subset allowance which is not part of either 250.B.3.f or C.3.f.(1). The Department is adding the clarifier "at all downgradient compliance wells" to remove any chance of misinterpreting an action already defined by EPA in its Subtitle D program which forms the basis for the VSWMR. None of the monitoring wells on site are allowed to show exceedances over natural site background for two consecutive years if a facility wants to revert to a less intensive phase of groundwater monitoring. The Well Subset allowance, currently contained within the VSWMR, already addresses the hypothetical questions raised in the comment.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>Columns B and C sampling events. We request that the Department consider allowing the possibility for a well or wells be moved from an Assessment subset to a Detection subset. A longer period of sampling could be considered, such as four consecutive Table 3.1 Columns B and C sampling events showing constituents at or below background values vs. the current two consecutive events.</p>	
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-340.B.1. Sites must be managed by a licensed operator in the state of Virginia. Getting qualified site personnel to become a licensed operator can be difficult and take time, especially for some facilities that may have been recently acquired through acquisitions. Having the facility operate under the supervision or oversight of a licensed operator should be just as protective.                  Recommendation:                  Revise to read: "The facility shall operate under the supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators." or "The facility shall operate under the oversight of a waste management facility operator licensed by the Board for Waste Management Facility Operators."</p>	<p>The requirement for the facility to operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators is a statutory requirement, and the regulatory language is consistent with the statutory language (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly. In addition, 18VAC155-20-110.A.2 of the Department of Professional and Occupational Regulation's Waste Management Facility Operators Regulations (which is not part of this regulatory amendment) requires an individual operating a facility that is defined in 9VAC20-81-10 as a transfer station, a materials recovery facility, an experimental facility, or a composting facility to hold a Class I license, and an individual operating a facility defined in 9VAC5-40-6560 as a municipal waste combustion unit shall hold a Class IV license.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA,</p>	<p>9VAC20-81-350.1. Sites must conduct monthly inspections and</p>	<p>The Department acknowledges the concern, but has determined that the requirements established in the proposed regulations are clear, sufficient, and consistent with other</p>

<p>and LaBella Associates</p>	<p>document each. The inspections must be kept on site for 3 years and made available for review upon request. Currently it seems like the request response is immediate and downloading records may take some time. The time needed to be able to provide documents needs to be clarified.</p>	<p>recordkeeping requirements. If facility staff need time to download records, then that can be coordinated with DEQ staff at the time the request for review is made.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Ryan Smith, VWIA, and LaBella Associates</p>	<p>9VAC20-81-350.2 &amp; 9VAC20-81-350.4. Sites must keep a log of all sampling and results that occur. All the information required is generally captured on a typical chain of custody, but this condition requires a log and the record to be kept on site for 3 years subject to review upon request. Currently it seems like the request response is immediate and downloading records may take some time. The time needed to be able to provide documents needs to be clarified.</p>	<p>The requirements in these sections (9VAC20-81-350.2 &amp; 9VAC20-81-350.4) exist in the current regulations and were not revised as part of the proposed regulation. The Department acknowledges the concern, but has determined that the requirements established in the regulations are clear, sufficient, and consistent with other recordkeeping requirements. If facility staff need time to download records, then that can be coordinated with DEQ staff at the time the request for review is made.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>LaBella Associates</p>	<p>9VAC20-81-140.B.6.b. This states that the facility boundary and the limits of the gas monitoring network are one and the same, which may not be accurate for all facilities. Recommendation: Revise to read: "The concentration of methane gas does not exceed the lower explosive limit for methane (5.0% methane by volume) within the facility gas monitoring network."</p>	<p>The Department agrees that the limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The facility boundary for landfills (as defined by the regulation) "encompasses the waste management boundary and all ancillary activities including, but not limited to...gas monitoring probes..." The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are considered points of compliance for lateral migration of landfill gas.</p> <p>To avoid confusion and clarify the requirement, the text has been revised as suggested. This change also requires revision of similar language in the following sections for consistency: 9VAC20-81-200.B.1.b, 9VAC20-81-200.D.1, 9VAC20-81-200.D.2, and 9VAC20-81-530.C.3.e.</p>
<p>LaBella Associates</p>	<p>9VAC20-81-140.B.19. Punctuation needed. Recommendation: Revise to read: "The</p>	<p>The Department agrees with this comment, and the text has been revised to add commas around "if necessary" in order to clarify the requirement. This change also requires revision of similar language in 9VAC20-81-340.B.2 for consistency.</p>

	<p>facility shall operate within the hours of operation specified in the permit. The facility may request a temporary extension of operating hours, if necessary, in order to respond to an emergency or other unusual event."</p>	
<p>LaBella Associates</p>	<p>9VAC20-81-140.B.20. Punctuation needed. Recommendation: Revised to read: "The facility shall not exceed the daily disposal limit or waste storage limits specified in the permit. The facility may request a temporary increase in daily disposal limit or waste storage limits, if necessary, in order to respond to an emergency or other unusual event."</p>	<p>The Department agrees with this comment, and the text has been revised to add commas around "if necessary" in order to clarify the requirement. This change also requires revision of similar language in 9VAC20-81-340.B.3 for consistency.</p>
<p>LaBella Associates</p>	<p>9VAC20-81-250.A.4.F. Is there a technical reason for prohibiting the use for dedicated bailers? Would you be able to provide clarification for this decision?</p>	<p>EPA established the performance standards that all groundwater sampling actions at regulated landfills must achieve under 40 CFR 258.53(a) noting the sampling methods used must ensure the monitoring results are an accurate representation of the groundwater quality at the background and downgradient monitoring wells. This performance standard applies regardless of the sampling method used. This language was originally written in 1991 and there have been significant advancements in the types and accuracy of groundwater sampling methods now available for use which were not available at the time of the promulgation of the Subtitle D rule.</p> <p>The proposed VSWMR amendment allows for bailer use to continue, but adds the requirement that the use of such antiquated technology must be demonstrated as necessary (based on site specific conditions) and the demonstration obtains Director approval. This allowance was presented in the revised VSWMR text because the Department is aware that in some cases, especially at sites where groundwater is found at great depths below the land surface, bailer use may be the only practical method to obtain samples from the aquifer. Therefore, the limitations in the quality/accuracy of the groundwater sample inherent with bailer use will be accepted because no other readily available method can be used to otherwise obtain the sample. However, in most cases, the owner/operator should be using newer sampling technologies that were unavailable when EPA initially promulgated the Subtitle D rule in 1991. Newer sampling technologies reduce the likelihood of</p>

		<p>the collection of groundwater samples being affected by entrained suspended solids which may lead to unrepresentative analytical results (especially for metals) and the need for the owner/operator to pursue costly Alternate Source Demonstrations.</p> <p>To remove any unintended confusion related to the use of the term “<i>dedicated</i>” in the proposed regulatory text, that word is herein removed.</p>
<p>The 3M Company</p>	<p><b>The rulemaking is premature.</b> This rulemaking is premature because it is contingent upon critical rules that are not yet finalized, or for some constituents, even proposed. The Proposed Amendment requires all landfills in Virginia to monitor for PFAS and other emerging contaminants after the Virginia Board of Health (Board) sets MCLs at some future time. Given that the Board has not yet implemented MCLs or even determined that MCLs are needed, for some of the listed substances, including PFAS, this rulemaking is premature. The Proposed Amendment requires sampling for six specific PFAS when corresponding MCLs are promulgated. Of those, the enabling statute only directs the Board to consider MCLs for PFOA and PFOS. Other PFAS are considered only “as the Board deems necessary.” Given this uncertain state of regulation for PFAS, it is inappropriate and premature to impose monitoring requirements prior to even understanding the</p>	<p>The proposed modification to the groundwater sampling list is a result of requirements within Code of Virginia § <u>32.1-169</u> (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL’s (HB 1257 and HB 586) for a certain list of constituents.</p> <p>The fact that the Virginia Department of Health may choose to set MCLs for additional PFAS constituents, not specifically named in the House Bills referenced above, based on the results of a surface water and groundwater sampling study completed within the Commonwealth, is not a limitation to adding a VSWMR requirement to begin sampling for the constituents already identified (by name) within the existing passed legislation.</p> <p>The addition of Column C to the proposed regulation does not require sampling and analysis of the proposed constituents to begin prior to the Virginia Department of Health promulgating MCLs.</p> <p>The proposed VSWMR regulation will require the sampling for (and analysis of) the list of constituents identified in the proposed regulation as soon as the Virginia Department of Health completes the MCL promulgation process now required by the Code of Virginia.</p> <p>The added Column C groundwater constituents are found in common commercial and household products which are discarded as municipal solid waste and therefore can become components of landfill leachate. The recognition of, and response to any impacts on human health and the environmental are determined by the sampling and analysis for these constituents as part of a regulated landfill’s groundwater monitoring program. The sole intent of the groundwater monitoring program is to determine whether leachate is being released from the landfill.</p> <p>For further clarification, the Department will add a footnote to Table 3.1 stating: “<i>The requirement to sample for the constituents listed in Column C above shall not become</i></p>

<p>standards that set the basis for this monitoring. Such premature rulemaking cannot meet the stringent standards set forth by the Virginia Administrative Process Act (APA). The APA requires agencies to describe the basis for and purpose of a proposed rule and the impacts on particular sectors. Yet, this Proposed Amendment cannot sufficiently do that as it has not fully evaluated the need for standards in the first instance. The only reference to these six PFAS in the Proposed Amendment is from a study conducted pursuant to HB586. However, this law or resulting study is not referenced in any of the documentation underlying this rulemaking, and the rulemaking and underlying documents do not provide any further scientific basis for selecting certain PFAS for monitoring. In addition, the Economic Impact Analysis (EIA) underlying this rule fails to meet all of these requirements and more as prescribed by the APA. PFAS substances should only be added to the monitoring standards list when DEQ has made a clear showing of whether and how it is necessary to do so. Instead, the Agency Background Document simply states that the monitoring requirements will detect and address</p>	<p><i>effective until the Virginia Department of Health has promulgated MCL's".</i></p>
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	<p>“impacts to groundwater so that risks to human health and the environment can be better understood.” This vague rationale does not explain how standards set forth in the rule would help the agency to “understand” risks to human health and the environment, nor how the agency selected the contaminants that it is choosing to monitor. In accordance with the APA, DEQ and DPB must revise and republish the EIA and Background Document to better explain the basis for the proposed rule.</p>	
<p>The 3M Company</p>	<p><b>The EIA Does not adequately estimate sampling and monitoring costs or costs of corrective action.</b> The Economic Impact Analysis (EIA) fails to estimate the costs of monitoring, sampling, and related “reporting recordkeeping and other administrative costs,” as required by the Virginia APA. The prospect of corrective action requirements on businesses, including upfront financial assurance requirements, cannot be predicted because an MCL value has not been set. The only cost quantified in the EIA is the cost of testing a single groundwater sample, which is estimated in the range of \$349 to \$700. Not only does this estimate present an overly wide range of sampling costs, it fails to</p>	<p>While the Department appreciates this comment, the comment pertains to the Department of Planning and Budget's Economic Impact Analysis and is not a comment on the proposed regulations.</p> <p>No change has been made to the regulation in response to this comment.</p>

<p>take into account ongoing costs, variations in required sampling frequency, and overall costs of testing when all single samples are combined. Furthermore, the proposed Amendment does not identify a preferred test method, and the technological feasibility of monitoring at the required levels will vary significantly depending on the MCL set. The Proposed Rule fails to consider the lack of available sampling methods for certain PFAS, and the fact that the mandated sampling requirements may not be technologically feasible. There are currently very few validated and published analytical methods available for evaluating PFAS in the environment. The available validated methods apply only to a limited subset of certain PFAS compounds. The EIA also fails to contemplate related costs associated with monitoring, including the potential need to drill new monitoring wells and additional administrative, personnel, and reporting costs. DPB's suggestion that it will seek this information as part of the public comment period for the draft EIA does not satisfy the requirements of the APA to provide the "best estimate" of costs "for the purposes of public review and comment." The regulation being amended imposes</p>	
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	<p>corrective action requirements for solid waste management facilities that discover listed contaminants exceeding the thresholds set forth by the monitoring requirements. See Proposed Rule at 9 VAC 20-81-25(C); 9VAC20-81-260. The corrective action requirements are extensive, involving initial and ongoing assessment and investigation, financial assurance, notice and public meetings, and the costs of the corrective action itself. Accordingly, the draft EIA is insufficient in that it does not address corrective action and/or remediation costs at all in clear violation of the APA's requirement for EIA's to include the "projected costs [of compliance] to affected businesses."</p>	
<p>The 3M Company</p>	<p><b>DPB's Economic Analysis is flawed, should be revised, and put forward for public comment.</b> The Draft EIA is insufficient under the standards set forth in the Virginia APA, § 2.2-4007.04, because it fails to meaningfully inform affected entities of the initial and ongoing costs of compliance, which will likely vary significantly based on the MCL value set. The EIA's sparse analysis of the costs of sampling and monitoring requirements, necessary infrastructure, administrative and reporting requirements, corrective action requirements, and costs</p>	<p>While the Department appreciates this comment, the comment pertains to the Department of Planning and Budget's Economic Impact Analysis and is not a comment on the proposed regulations.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>related to additional PFAS that may be regulated in the future, makes it impossible for regulated entities to prepare to comply with this proposed Amendment or meaningfully participate in the rulemaking process. 3M requests that DPB reassess the economic impacts to regulated entities and re-issue the revised EIA for public comment in accordance with the APA. DPB must re-write its EIA to be consistent with the requirements of the APA, and must put the revised document forward for public comment. Va. Code § 2.2-4007.04(E)(1-2) requires that "The Department shall revise and reissue its economic impact analysis... if... public comment... indicates significant errors in the economic impact analysis; or there is significant or material difference between the agency's proposed economic impact analysis and the anticipated negative economic impacts to the business community as indicated by public comment..."</p>	
<p>Linda Norris-Waldt, US Composting Council</p>	<p>9VAC20-81-10 DEFINITIONS          1. Correct the Compost Definition: "Compost" means a stabilized organic product produced by a controlled aerobic decomposition process in such a manner that the product can be handled, stored, or applied to the land</p>	<p>The Department agrees with the suggestions and has revised the definitions as follows.</p> <p>"Compost" is a stabilized organic product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth.</p>

<p>without adversely affecting public health or the environment.                  Replace with the American Association of Plant and Food Control Officials definition adopted in 2018, reference 75th edition, AAPFCO Official Publication (2022):                  Compost is the product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment, but may also contribute plant nutrients.</p> <p>2. Add to definitions:                  Certified Compostable Products: Any product specifically manufactured to break down in a compost system at the end of its useful life. Examples include containers, films, or foodservice ware such as bowls, plates, cups, cutlery, and bio-plastic liner bags. Products are composed of materials such as vegetable matter, paper, cardboard, and plastics and are certified as conforming to ASTM D6400 or ASTM D6868 standards. A third-party certification body should be required, as approved by the state. These</p>	<p>Compost is typically used as a soil amendment, but may also contribute to plant nutrients.</p> <p>“Certified Compostable Products” means any product specifically manufactured to break down in a compost system at the end of its useful life. Examples include containers, films, or foodservice ware such as bowls, plates, cups, cutlery, and bio-plastic liner bags. Products are composed of materials such as vegetable matter, paper, cardboard, and plastics and are certified as conforming to ASTM D6400 or ASTM D6868 standards, or equivalent.</p>
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	<p>products should be labeled in accordance with the state labeling guidelines.</p>	
<p>Linda N orris-Waldt, US Composting Council</p>	<p>9VAC20-81-410 Permits-by-rule and other special permits. new addition (Derived from Maryland regulations): "9VAC20-81-95D. The following activities are conditionally exempt from this chapter provided no open dump, hazard, or public nuisance is created:" #. On-farm composting in an area no more than 5,000 square feet using covered windrowing, invessel systems, and/or aerated static pile (ASP) technology, when used to process offsite waste organic Category I, Category II, or Category III feedstocks in containers designed to prohibit vector attraction and prevent nuisance odor generation. "On-farm" sites would be defined as farming operations as the primary land use on the property. Feedstock piles may not be higher than 9 feet and all other piles are limited to a height of 12 feet. When determining the area used in support of composting, include areas used for feedstock receiving and preparation (such as mixing, shredding, water addition), active composting, curing, and storage (including compost, equipment, and waste). The areas do not need to be contiguous and spaces not used for any of the activities listed</p>	<p>The regulation currently has exemptions for agricultural composting outlined in 9 VAC 20-81-95.D and 9 VAC 20-81-397. The proposed regulations have also been expanded to allow for the receipt of Category I feedstocks to be received from off-site for exempt agricultural composting.</p> <p>No change to the regulations was made in response to this comment.</p>

	above may be omitted, including empty fields and roads. For an area greater than 5,000 square feet, approval from the department will be required prior to composting.	
Linda Norris-Waldt, US Composting Council	9VAC20-81-310 Applicability (4) Compostable or biodegradable food containers and utensils. Please strike the words or biodegradable and replace with Certified Compostable Products as defined in this regulation.	The Department agrees with this suggestion and 9 VAC 20-81-310.A.3.c (4) has been revised to read, "Compostable or certified compostable products as defined in this regulation."
Linda Norris-Waldt, US Composting Council	9VAC20-81-340 Operation requirements Recommend this addition to (B)1: 1. The facility shall operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators and trained and certified by the US Composting Council's Certified Compost Operation's Manager program ( <a href="https://certificationsuscc.org/Certification/The-Basics">https://certificationsuscc.org/Certification/The-Basics</a> )	The Department appreciates the comment; however, 9 VAC 20-81-340.B.1 is applicable to various solid waste management facilities and not just composting operations. The requirements for facilities to operate under an operator licensed by the Board for Waste Management Facility Operators is a statutory requirement, and the regulatory language is consistent with the statutory language (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly.  No change to the regulations was made in response to this comment.
Linda Norris-Waldt, US Composting Council	We suggest section C (2) be replaced with this testing from the USCC's Model Rule Template: Tier Two and Three facilities shall meet the following test standards and requirements: 1. Samples and measurements taken for the purpose of product testing shall be representative of the composting activity and shall be conducted in a manner consistent with	The Department appreciates the suggestion. However, the proposed changes would require increased testing frequencies which are beyond the scope of this proposed regulatory amendment.  No change to the regulations was made in response to this comment.

<p>TMECC or other applicable standards pre-approved by [state regulatory agency]. 2. The minimum number of samples that shall be collected and analyzed is shown below. Samples to be analyzed shall be composted prior to the analysis. Compost samples must be collected from ready-to-sell finished compost using TMECC sampling methods. Compost</p> <p>Quantity1 Frequency          1 – 6200 tons/year Must test every three months          6201 – 17500 tons/year Must test every two months          17501 tons/year and above Must test every month</p> <p>1 Either the amount of finished compost applied to the land or prepared for sale or giveaway for application to the land (on an “as is” or “wet tons” (wet weight) basis)</p> <p>1. All compost shall be tested for stability using one of the methods listed in TMECC 5.08, Respirometry.          1. The stability results must be reported          2. All compost shall be tested for the presence of pathogens using the methods in TMECC 7.00, Pathogens.          1. Either the density of fecal coliform in the finished compost shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. Bacteria in the finished compost shall be less than three MPN per four</p>	
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	<p>grams of total solids (dry weight basis) before the compost may be sold, given away or applied to the land.</p> <p>2. All composts shall be analyzed for metals listed in 40 CFR, Section 503.13(b)(3), as amended using methods described in TMECC 4.00 Chemical Properties</p>	
<p>Linda Waldt, MD-DC Composting Council Steering Committee; Brenda Platt, MD-DC Composting Council; Ryan Duckett, Virginia Composting Council; Nate B; Kathleen Turk, Virginia Native Plant Society; Sophia Jones, Institute for Local Self-Reliance; Iveta Bakalova, Nature Serve;</p>	<p>9VAC20-81-95D Conditionally Exempt Regulations. The majority of this language was directly pulled from the State of Maryland’s on-farm composting exemptions. The purpose of this comment will be to increase community resilience in Virginia and help achieve the recently established 2022 Executive Order 17, #3 Stopping Food Waste. As prices for nutrient amendments sky-rocket, locally &amp; organically-sourced nutrients are essential for our farming communities and local soil health. Promoting decentralized on-farm food scrap composting will help bridge the gap between reducing waste and keeping valuable nutrient-rich material in our ecosystem. I recommend adding the following comment to allow farmers to start small-size food scrap composting with minimal cost as a trial step prior to considering an increase to permitting. Add the following: “9VAC20-81-95D. The following activities are conditionally exempt from this chapter</p>	<p>The existing on-farm composting exemption in 9 VAC 20-81-95.D.4 has been expanded within the regulation to allow for the acceptance of Category I feedstocks from off-site to promote diversion of pre-consumer organic food waste. With DEQ notification, current exemptions in the regulations under 9 VAC 20-81-95.D.3 – composting for educational purposes, and 9 VAC 20-81-397.B.2, can be utilized to allow farmers to try small scale food scrap composting prior to obtaining a permit.</p> <p>No change has been made to the regulation in response to this comment.</p>

<p>Sophia Chapin; Debbie Daughtry; Indoo Desai; Stephanie Danahy; Joanna Ostroot; Jim Osborn; Marco Sanchez; Marisol Mata; Christopher Justin Proctor; Rita Bernert; Rev. Russell Heiland, Unity of Fairfax; Nick Shaw, Apex Compost; Claudette Magume; Juan Pablo Echeverria; Arcadia Center for Sustainable Food and Agriculture; Kristie Blumer, Compo</p>	<p>provided no open dump, hazard, or public nuisance is created.” #. On-farm composting in an area no more than 5,000 square feet using covered windrowing, invessel systems, and/or aerated static pile (ASP) technology, when used to process offsite waste organic Category I, Category II, or Category III feedstocks in containers designed to prohibit vector attraction and prevent nuisance odor generation. “On-farm” sites would be defined as farming operations as the primary land use on the property. Feedstock piles may not be higher than 9 feet and all other piles are limited to a height of 12 feet. When determining the area used in support of composting, include areas used for feedstock receiving and preparation (such as mixing, shredding, water addition), active composting, curing, and storage (including compost, equipment, and waste). The areas do not need to be contiguous and spaces not used for any of the activities listed above may be omitted, including empty fields and roads. For an area greater than 5,000 square feet, approval from the department will be required prior to composting.</p>	
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<p>st Crew; FRESH FARM; and Anony mous.</p>		
<p>Karol Akers</p>	<p><b>Open Burning of Household Waste on Private Land.</b> Curious as to the agency’s and board’s authority to regulate and/or prohibit any homeowner from doing anything with his own waste on his own land. Section 10.1-1400 of the Code of Virginia specifically spells out solid waste the agency and board can regulate. While community activities are to be regulated, private citizens and their activities on their own land with their own waste are not included. Local ordinances would apply via different applications of Code sections, but where is this authority granted to either the agency or the board by the General Assembly? Just because you think it might be a good idea, isn’t sufficient. Please cite the statutory authority for regulating household activities by homeowners on their own land.</p>	<p>Section 10.1-1400 of the Code of Virginia defines “Person” as an individual, corporation, partnership, association, governmental body, municipal corporation, or any other legal entity. Section 10.1-1402 of the Code of Virginia authorizes the Virginia Waste Management Board to supervise and control waste management activities in the Commonwealth and to promulgate and enforce regulations, and provide for reasonable variances and exemptions necessary to carry out its powers and duties and the intent of the chapter. Section 10.1-1408.1 of the Code of Virginia requires a permit to be obtained to conduct nonhazardous solid waste disposal, treatment or storage activities. Further, Section 10.1-1408.1 states that</p> <p>“G. No person shall dispose of solid waste in an open dump or dispose of or manage solid waste in an unpermitted facility, including by disposing, causing to be disposed, or arranging for the disposal of solid waste upon a property for which the Director has not issued a permit and that is not otherwise exempt from permitting requirements.</p> <p>H. No person shall own, operate or allow to be operated on his property an open dump.</p> <p>I. No person shall allow waste to be disposed of on his property without a permit.”</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-10 Definitions. Concerning the definition of "Accumulated speculatively," in the case of Coal Combustion Residual (CCR) materials, it may be difficult to meet the 75% of accumulated material need to be removed from the facility annual.</p>	<p>The “Accumulated speculatively” definition is for materials that are accumulated or gathered up, and the sections where it applies are clarified in the regulations. CCR material currently residing in permitted/regulated ponds, landfills, lagoons, or compliant storage areas would not be considered as accumulated speculatively, provided storage was compliant with the capacity for the storage unit.</p> <p>No change has been made in response to this comment.</p>

	<p>Golder suggests either a specific carveout addressing CCR materials or a text addition where "...materials can continue to be stored in existing ponds, buildings, or approved solid waste facilities such as landfills, ponds, lagoons, or compliant storage areas until removed from the facility for use, reuse, or reclamation".</p>	
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-10 Definitions. Concerning the definition of "Landfill mining," in the case of excavating overfilled wastes, Golder suggests adding "...to facilitate correction of overfills, installation of landfill gas, leachate..."</p>	<p>The Department agrees with this recommendation and text has been changed as recommended.</p>
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-98. Concerning the language in subdivision B.4: "– Leak-proof; including sides, seams, and bottoms, and durable enough to withstand anticipated usage without rusting, cracking, or deforming in a manner that would make it a fire health or safety hazard or provide harborage for vectors"; the term "Leak-proof" could be interpreted as an absolute (i.e., waterproof) without further defining the term. Also, as a practical matter, most existing roll-off boxes, front end loader boxes, or other temporary disposal containers may not be able to meet this leak-proof standard and this absolute standard may not be appropriate for every type of waste.</p>	<p>The Department agrees with this comment, and the text has been revised to replace "leak-proof" with "leak-resistant" for consistency with industry best practice.</p>

	<p>Golder suggests using the term “Leak-resistant” instead, since the term “resistant” is commonly used as something that is very good but may not be an absolute.</p>	
<p>Michael William s, Golder Associates USA Inc.</p>	<p>9VAC20-81-120. Concerning the siting requirement in subdivision D.1.a “500 feet from any residence, school, daycare center, hospital, nursing home, or recreational park area in existence at the time of application”; Golder opposes this new restriction to the use of the available permitted facility boundary area. This new restriction could affect existing public facilities where it could result in a reduction of potential airspace (i.e., planned revenue source) or areas needed for leachate storage. Golder suggests this increased restriction be limited to “new facilities” where it can be planned for a reduction in the permitted facility boundary area.</p>	<p>The requirement as proposed is the distance from the new or expanded waste management boundary, not the facility boundary. Expansion is defined in 9 VAC 20-81-10 as the horizontal expansion of the waste management boundary as identified in Part A. This requirement would not be applicable to already permitted waste management unit boundaries as defined in their existing Part A approval. It would only apply to new facilities or newly expanded waste management boundaries.</p> <p>No change has been made in response to this comment.</p>
<p>Michael William s, Golder Associates USA Inc.</p>	<p>9VAC20-81-120. Concerning the siting requirement in subdivision D.1.c, “100 feet from the facility boundary;” Golder opposes this new restriction to the use of the available permitted facility boundary area. This new restriction could affect existing public facilities where it could result in a reduction of potential airspace (i.e., planned revenue source) or areas needed for leachate storage. Golder suggests</p>	<p>Expansion is defined in 9 VAC 20-81-10 as the horizontal expansion of the waste management boundary as identified in the Part A. This requirement would not be applicable to already permitted waste management unit boundaries as defined in their existing Part A approval. This requirement would only apply to new facilities or newly expanded waste management boundaries. This requirement aligns with consensus reached by the RAP.</p> <p>No change has been made in response to this comment.</p>

	<p>this increased restriction be limited to “new facilities” where it can be planned for a reduction in the permitted facility boundary area.</p>	
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-140. Concerning the operation requirement in subdivision B.14. “Internal roads in the landfill shall be maintained to be passable in all weather by ordinary vehicles. All operation areas and units shall be accessible, including the access roads or paths to monitoring locations;” Golder opposes adding language that requires all weather access for roads or paths to monitoring locations. This could be impracticable for certain monitoring locations.</p>	<p>The current regulations already require the facility to maintain all-weather internal roads, provide access to operational areas and units, control safety hazards to operating personnel, and maintain a health and safety plan describing measures to protect the facility and other personnel from injury. This change is meant to clarify that roads or paths to monitoring locations should remain accessible. This is to ensure that facility staff and other individuals (such as contracted field technicians) can access gas monitoring probes, groundwater monitoring wells, and surface water monitoring points either by vehicle or by foot to sample, inspect, provide maintenance, or make a repair, without encountering downed trees, thick vegetation, significant ponding water, or other obstacles in the road or path which could prevent access, delay monitoring events, maintenance or inspections, contribute to equipment or vehicle damage, or create potential hazards for trips, falls, and injury (e.g. tick or snake bites).</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-140. Concerning the topographic survey requirements in subdivision B.21, “Each landfill with a permitted daily disposal limit of more than 300 tons per day shall perform a topographic survey of the active portion of the landfill on an annual basis (at least once every 12 months). Each landfill with a permitted daily disposal limit of 300 tons per day or less shall perform a topographic survey of the active portion of the landfill on a biennial basis (at least once every 24 months);” Golder suggests revising the proposed language to be based on the “permitted average daily disposal limit” to avoid</p>	<p>The survey frequency is based on the permitted daily disposal limit since this is a firm value established in the permit.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>confusion with facilities that may have a permitted “maximum” daily disposal limit but operate under a permitted “average” daily disposal limit.</p>	
<p>Michael William s, Golder Associates USA Inc.</p>	<p>9VAC20-81-140.Concerning the requirement in subdivision E.1.b, “Lift heights shall be sized according to the volume of waste received daily and the nature of the industrial waste. A lift height is not required for materials such as fly ash that are not compactable,” Golder suggests deleting the words “such as fly ash” in the last sentence as shown above since fly ash material can be and should be compacted when disposed or stored in a permitted landfill.</p>	<p>The Department agrees with this comment, and the text has been revised to delete the words “such as fly ash” in order to correct the accuracy of the text.</p>
<p>Michael William s, Golder Associates USA Inc.</p>	<p>9VAC20-81-140.Concerning subdivision E.2, “Incinerator and air pollution control residues containing no free liquids shall be incorporated into the working face and covered at such intervals as necessary to minimize them from becoming airborne. Dust control measures such as surface wetting, crusting agents, or other strategies shall be utilized in a manner and frequency suitable to control dust from other wastes that could become airborne, such as fly ash and bottom ash from burning of fossil fuels;” Golder suggests deleting the words “such as fly ash and bottom ash from burning of fossil</p>	<p>Similar text exists in the current regulations. The text was reorganized and clarified as part of the proposed regulation. Fly ash and bottom ash are common waste types managed by industrial landfills that could contribute to dust issues if proper control measures are not implemented. This comment does not indicate a problem that is solved by the suggested revision or how the absence of this change would not protect the health, safety and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>fuels“ in the last sentence. It seems inappropriate to single out any one type of waste in this context.</p>	
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-250. Concerning the groundwater monitoring program requirement in subdivision B.2.a.(4), “Data from the background wells during each subsequent sampling event shall be added to the previously calculated background data for the recalculation of site background once every four years, unless approval for a longer timeframe is obtained from the department, to maintain the most accurate representation of background groundwater quality for statistical purposes required under subdivision A 4 h of this section”; Golder suggests that this section be revised to indicate that background concentrations should be established with data collected within a rolling window of time to be established based on the site-specific groundwater travel time from the upgradient side of the landfill to the downgradient side of the landfill. This will help prevent false-positive statistically significant detections based on temporal variations in natural groundwater quality.</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA’s 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA’s current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities would have to meet based on the highly variable geology of the Commonwealth.</p> <p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Landfills located within the Commonwealth are conducting groundwater sampling pursuant to their site specific timeframes. It is best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA’s 2009 Unified Statistical Guidance document.</p> <p>The rolling window suggested by the commenter may have merit at some landfills based on site specific conditions, and such action would be approvable on a case-by-case basis working with the appropriate Regional Office. Since the proposed VSWMR text already allows for longer timeframes upon approval of the Director, no further regulatory changes are needed. Requests such as these are better handled through the Variance procedure already defined in the VSWMR where site-specific conditions can be taken into account during the request and approval process.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Michael Williams,</p>	<p>9VAC20-81-250. Concerning the groundwater monitoring</p>	<p>The requested change has been made to the proposed Regulation.</p>

<p>Golder Associates USA Inc.</p>	<p>program requirement in subdivision E.2(g), "A table listing the constituents identified during the year's sampling events, their concentrations at the respective monitoring well, and if applicable, the related groundwater protection standard in effect during the sampling event;" Golder recommends that the term "identified" in this section be changed to "detected" to clarify the intent of the requirement.</p>	
<p>Michael Williams, Golder Associates USA Inc.</p>	<p>9VAC20-81-450. Golder suggests that the permit application requirements in subdivision C.1 should be revised as indicated per the suggested <del>strikeout</del>/inserted text: 1. The applicant shall complete, sign, and submit <del>three copies</del> one paper copy and one electronic copy of the Part A application containing required information and attachments as specified in 9VAC20-81-460 to the department and shall submit to the department the applicable permit fee under the provisions of 9VAC20-90. The application shall include the following certification signed by the <u>consultant for the applicant</u> "I certify under penalty of law that, <u>based on my knowledge of [what the permit is covering]</u>, this document and all attachments were prepared under my direction or supervision, <u>and consistent with a professional standard of care</u>, in accordance with a system designed to</p>	<p>The Department appreciates the suggestion however, the regulation is written so that the applicant (future permittee) certifies the information that is being presented. The intent is such that the permittee will review the consultant's work prior to submittal. The permittee is responsible for ensuring the information provided in the application is accurate.</p> <p>No change has been made in response to this comment.</p>

	<p><u>provide ensure</u> that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted <u>is in my professional opinion and,</u> to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations." <u>As used herein, the word "certification" or "certify" shall mean an expression of the Engineer's professional opinion to the best of his or her information, knowledge, and belief, and does not constitute a warranty or guarantee by the consultant."</u></p>	
<p>Michael William s, Golder Associates USA Inc.</p>	<p>9VAC20-81-450. Golder suggests that the permit application requirements in subdivision D.1 should be revised as indicated per the suggested strikeout/inserted text: 1. The applicant, after receiving Part A approval, may submit to the department a Part B application to include the required documentation for the specific solid waste management facility as provided for in 9VAC20-81-470 or 9VAC20-81-480. The Part B application and supporting</p>	<p>The regulation is written so that the applicant (future permittee) certifies the information that is being presented. The intent is such that the permittee will review the consultant's work prior to submittal. The Department does not agree with the proposed revisions which are written so that the consultant certifies the application on behalf of the permittee/applicant. The consultant is responsible for certifying the design and other documents associated with the application, but the permittee/applicant will certify the permit application.</p> <p>No change has been made in response to this comment.</p>

<p>documentation shall be submitted <del>in three copies</del> as one paper copy and one electronic copy and must include the applicable permit fee under the provisions of 9VAC20-90 and the financial assurance documentation as required by 9VAC20-70. The application shall include the following certification signed by the applicant "I certify under penalty of law that, <u>based on my knowledge of [what the permit is covering]</u>, this document and all attachments were prepared under my direction or supervision, <u>and consistent with a professional standard of care</u>, in accordance with a system designed to <u>provide ensure</u> that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is <u>in my professional opinion and</u>, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations." <u>As used herein, the word "certification" or "certify" shall mean an expression of the Engineer's professional</u></p>	
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	<p><u>opinion to the best of his or her information, knowledge, and belief, and does not constitute a warranty or guarantee by the consultant."</u></p>	
<p>Keith Buch, Powhatan, VA</p>	<p>After reviewing the "Opportunity for Public Comment on VA Solid Waste Management Regulations" it became immediately clear that a grave error had been committed. All 12 of the below comments made by myself and received during the 2019 periodic review comment period were not provided to the Regulatory Advisory Panel (RAP) members for review and discussion at their meetings for consideration for inclusion in the regulations. All 11 of my additional comments made during the NOIRA public comment forum from 2/15/2021 through 4/16/2021 were forwarded to the RAP for review/discussion and have been addressed in writing. DEQ acknowledged receipt through e-mails of all 12 of my comments made during the 2019 review period. I believe there are others who commented during the 2019 review period but their comments as well as my 12 were never forwarded to the RAP. The only solution is to reconvene the RAP to consider the comments that were never forwarded to them.</p>	<p>All public comments received on the VSWMR periodic review and NOIRA were distributed to the RAP on May 6, 2021, for their consideration in advance of their May 21, 2021 meeting.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Keith Buch,</p>	<p><u>Comment # 1:</u></p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part</p>

<p>Powhatan, VA</p>	<p>1) The proposed Cumberland County Green Ridge Landfill (Mega Fill) plans to use a HDPE 60 mil synthetic liner underlain by a geosynthetic clay membrane. This liner system is called a composite system. This does not afford adequate protection to the 1000 shallow residential drinking water wells within 3 miles of the Mega Fill. Please refer to the below Landfill Siting Review requirements of the Virginia Solid Waste Management Act. Unfortunately, the Solid Waste Management Act only addresses Public Drinking Water Systems in B 3 and not residential drinking water wells. This is a huge oversight that must be addressed. Residential wells must be afforded the same degree of protection as public drinking water systems.</p> <p>2) It is recommended that Legislation be introduced to add residential drinking water wells to the Landfill Siting Review section of the Virginia Solid Waste Management Act. It is suggested that the following language be added to the Landfill Siting Review: "New Landfills within three miles upgradient of any existing residential drinking water well shall require the installation of at least two synthetic liners under the waste disposal areas and require leachate collection systems to be</p>	<p>of this comment provides suggested changes to the Waste Management Act to include residential drinking water wells in the siting criteria along with public drinking water systems, installation of a double liner system for any landfills located three miles upgradient of any residential drinking water well, and prohibiting construction of a new landfill closer than 2500 feet of an existing residential drinking water well. Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly.</p> <p>No change has been made in response to this comment.</p>
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	<p>installed above and below the uppermost liner. No new landfill shall be constructed closer than 2500 feet of an existing residential drinking water well."</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order. The above described proposed legislation would enable the DEQ to implement corresponding regulations.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 2:</u>                  It is widely accepted that host counties to a new landfill (i.e. Cumberland County) as well as adjacent counties within 5 miles of a new landfill such as Powhatan County will have to deal with increased heavy truck traffic as well potential ground water contamination, odors, litter, noise, and decreased property values. Even though both the host and the adjacent county will both shoulder the burden of dealing with increased heavy truck traffic as well potential ground water contamination, odors, litter, noise, and decreased property values only the host</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part of this comment addresses suggested updates to the statute to include a host fee to adjacent counties within 5 miles of a new landfill. Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly.</p> <p>No change has been made in response to this comment.</p>

<p>community is reimbursed for hosting the new landfill by receiving a fee from the landfill operator for each ton of waste disposed at the new facility.</p> <p>Cumberland County by hosting the Green Ridge Mega Fill will receive a minimum base fee of \$1.50 per ton of trash and can derive upwards of \$2,700,000 per year in host disposal fees.</p> <p>Adjacent Powhatan County which is 1300 feet from the Mega Fill will receive nothing. In order to minimize this disparate treatment the following proposed legislation that would amend 10.1-1408.1 (attached below)</p> <p>A county that is not a host to a new landfill receiving municipal solid waste but is within five (5) miles of the new landfill will receive a host fee per ton of waste disposed by the Operator of the new landfill.</p> <p>Beginning with the effective date of this legislation the host fee for adjoining counties to new landfills shall be \$1.50 per ton of waste disposed by the Operator of the new landfill.</p> <p>Beginning on the day the new landfill becomes operational, the adjoining county host fee shall be paid on a monthly basis by the 15th of the month based on the tonnage of waste disposed the previous month. On every yearly anniversary of this legislation the host fee in this legislation shall be increased</p>	
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	<p>annually thereafter from the initial \$1.50 per ton based on the Consumer Price Index. The annual increase shall be not more than 3% but no less than 1%. Daily landfill cover will not be considered as waste disposed. This legislation shall apply to all new landfills that have not received a Certificate to Operate from the DEQ on the effective date of this legislation. Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order. The above described proposed legislation would enable the DEQ to implement corresponding regulations.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 3:</u>                  1) The below excerpt from Section 460 Part A Landfill Application only requires the applicant to characterize the upper most aquifer beneath the proposed site and the presence of significant impermeable zones beneath the waste management boundary. The applicant is not required to determine if there is a hydraulic interconnection between the upper and lower</p>	<p>9 VAC 20-81-460.F.2.c already requires the submission of a <b>“Hydrogeologic Report”</b> that includes, at a minimum, the technical information described within F.2.c.(1-4). The Department also notes that for landfill sites located in the Coastal Plain physiographic province of Virginia, no discussion of bedrock aquifer characteristics would be required. In other physiographic provinces of Virginia, a discussion would be required and if found lacking in the Part A (or B) submission(s), would be required as part of Department-required revisions to the Hydrogeologic Report during the Part A Technical Review process. Lastly, EPA (see 56 FR 196, pg 51066-67) requires that such studies include any <i>“hydraulic interconnection between the upper and lower aquifers”</i>.</p> <p>No change has been made to the regulation in response to this comment</p>

	<p>aquifers. This potential interconnection is very important because in the case of the proposed Green Ridge Landfill most of the surrounding residential drinking wells are drilled into lower aquifers consisting of fractured bedrock.</p> <p>2) Section 460 Part A should be amended to require the applicant to characterize the impermeable layer as to if one exists, its areal extent, its thickness, as well as its ability to prevent the migration of contaminants into lower aquifers. The applicant must determine if there is a hydraulic interconnection between the upper aquifer and lower aquifers.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 4:</u>                  1) Since the proposed Green Ridge landfill is proximate to Western Powhatan County (1300 feet) many who reside there are concerned about potential ground water contamination, odors, noise, light, and other quality of life issues. Also our</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part of this comment addresses suggested updates to the Notice of Intent public comment steps in 9 VAC 20-81-450.B.4. The requirements outlined in the regulations are taken from the Waste Management Act (§10.1-1408.1.B.4 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly.</p> <p>No change made in response to this comment.</p>

<p>Powhatan citizens in general are also concerned about the increased heavy truck traffic on Route 60 from refuse trucks going too and from the proposed landfill. Section 450 Permit Application Procedures of The Solid Waste Management Regulations (see below) requires that prior to submitting a NOI Green Ridge is required to solicit input from the Public as follows.</p> <p>4. If the applicant proposes to operate a new sanitary landfill or transfer station, the notice of intent shall include a statement describing the steps taken by the applicant to seek the comments of the residents of the area where the sanitary landfill or transfer station is proposed to be located regarding the siting and operation of the proposed sanitary landfill or transfer station. The public comment steps shall be taken prior to filing with the department the notice of intent.</p> <p>a. The public comment steps shall include publication of a public notice once a week for two consecutive weeks in a newspaper of general circulation serving the locality where the sanitary landfill or transfer station is proposed to be located and holding at least one public meeting within the locality at a time convenient to the public to identify issues of concern, to facilitate</p>	
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<p>communication, and to establish a dialogue between the applicant and persons who may be affected by the issuance of a permit for the sanitary landfill or transfer station.</p> <p>Green Ridge conducted a public input meeting in Cumberland County on August 28, 2018. Advance notice of the public meeting was published in the Farmville Herald. The Farmville Herald has circulation in the Counties of Cumberland, Buckingham, and Prince Edward as well as as the Town of Farmville. The Farmville Herald has no circulation in the County of Powhatan.</p> <p>The critical wording from the Waste Management Regulations is "to seek the comments of the residents of the area where the sanitary landfill or transfer station is to be located".</p> <p>Clearly, the area where the sanitary landfill is to be located includes Western Powhatan County and therefore no attempt was made to seek the input from Powhatan Residents.</p> <p>2) It is requested that Section 450 be clarified to clearly require an applicant for a new landfill to conduct a public input meeting in the locality where the facility will be located as well as a separate public input meeting in an adjacent locality if that locality is located less than 5 miles from the proposed landfill.</p>	
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	<p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 5:</u>                  The regulations must be revised to add the following minimum requirements to a Host Agreement:                  1) The Agreement must have a standard "Officials Not to Benefit" clause. Suggested language for the clause should be as follows:                  High level officials of the County and their relatives shall derive no benefit from the Host Agreement. High Level Officials include present and future members of the Board of Supervisors as well as the County Administrator and Deputy County Administrator plus all County Department Heads inclusive but not limited to County Attorney, Zoning Officer, and Tax Assessor. Benefits include but are not limited too accepting employment, gifts, or gratuities from the landfill, its affiliates and subsidiaries as well as its parent corporations or owning a financing interest in the</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part of this comment addresses suggested updates to the minimum requirements for a Host Agreement. The minimum host agreement requirements are outlined in the Waste Management Act (§10.1-1408.1.B.7 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly.</p> <p>No change made in response to this comment.</p>

	<p>aforementioned entities.. Benefit shall not mean host payments/reimbursements made to the County.</p> <p>2) The final height and volume of the proposed landfill must be quantified.</p> <p>3) Methods of controlling trespassers from entering the landfill property and disposal areas are not discussed.</p> <p>4) The Landfill Liaison must have the authority to stop an imminent hazard that they observe that could result in substantial property/environmental damage, serious injury, or death. Minimum experience requirements for the Landfill Liaison must be specified.</p> <p>5) Processes or procedures for settling minor differences that occur between the landfill and the County before they evolve into breaches and default must be specified . The Host Agreement should not rely on litigation to settle breaches and default. In order to avoid protracted litigation the Agreement must rely on Binding Dispute Resolution to settle breaches and default.</p> <p>6) The DEQ Solid Waste Permit, County Zoning Approvals, DEQ Storm-water Permit, DEQ Air permit, VDOT Approval, and Corps of Engineer Section 404 Permit (if applicable) must be specifically referenced in the Agreement.</p>	
<p>Keith Buch,</p>	<p><u>Comment # 6:</u></p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part</p>

<p>Powhatan, VA</p>	<p>1) Ground water can flow huge distances over a relatively short period of time in fractured bedrock. Most of the public and private sources of water in the general area of the proposed Green Ridge landfill draw their drinking water from fractured bedrock. The New Jersey Department of Environmental Protection has long recognized this hazard and has adopted the below regulation in response to this hazard. It is recommended that the DEQ also adopt this regulation.</p> <p>2) A sanitary landfill located in a geologic area in which the bedrock is at or near the surface and that serves as a direct source for a public community water system, shall, at a minimum, have a containment system consisting of a double composite liner system. The primary and secondary geomembrane liners in the double composite liner system shall be in compressive contact with a clay or admixture liner below the geomembrane liner. A leak detection/collection system shall be located between the primary composite liner and the secondary composite liner.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of</p>	<p>of this comment provides suggested changes to require installation of a double liner system in geologic areas in which the bedrock is at or near the surface and that serves as a direct source for a public community water system. The regulations currently require that no new or expanded waste management boundaries shall be closer than three miles upgradient from any existing surface or groundwater public water supply intake or reservoir in existence at the time of application, or if closer distance, no closer than one mile. The proposed landfill would need to meet the requirements of §10.1-1408.4.B.3 of the Code of Virginia, which includes two synthetic liners.</p> <p>No change has been made in response to this comment.</p>
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	<p>Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 7:</u>                  The Proposed Green Ridge Landfill which closely borders Muddy Creek, a substantial tributary of the James River, is planning to be open for business in Cumberland County as the third largest landfill on the East Coast as early as 2021. Because of its close proximity to Muddy Creek it has the potential to adversely impact down stream water providers, including Henrico and Richmond, who use the James as a source of drinking water. The 1200 acre site as it exists now is heavily forested and has several streams running through it that feed into Muddy Creek. It is recommended that the below regulation be adopted to protect the James River water users.                  2) Any new landfill built within 2500 feet of an up stream surface tributary that feeds a Public Water System surface water intake SHALL have the double liner composite system with primary and secondary leachate systems to absolutely minimize contamination. In addition, new landfill leachate holding tanks</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment. The other part of this comment suggests that any new landfill built within 2500 feet of an up stream surface tributary that feeds a Public Water System surface water intake shall have the double liner composite system with primary and secondary leachate systems to absolutely minimize contamination. In addition, new landfill leachate holding tanks built within 2500 feet of an up stream surface tributary that feeds a Public Water System surface water intake shall have an impermeable secondary containment system that holds 110% capacity of the tanks. The regulations contain requirements for siting and leachate management. The regulation establishes setback criteria of 100 feet for perennial streams, rivers; or within one mile upgradient of any existing surface or groundwater public water supply intake or reservoir. Sanitary landfills within three miles upgradient of any existing surface or groundwater public water supply intake or reservoir have to meet the provisions of §10.1-1408.4.B.3 of the Code of Virginia, one of which is the installation of at least two synthetic liners under the waste disposal areas and requires leachate collection systems to be installed above and below the uppermost liner. The RAP reviewed the siting criteria and concluded they are protective of human health and the environment. The regulations also require leachate tanks and surface impoundments to have a capacity at least equal to the maximum 7 day leachate production and surface impoundments be equipped with a liner system that provides equal or greater protection of human health and the environment than that provided by the landfill liner.</p> <p>No change has been made in response to this comment.</p>

	<p>built within 2500 feet of an up stream surface tributary that feeds a Public Water System surface water intake SHALL have an impermeable secondary containment system that holds 110% capacity of the tanks.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment #8</u>  <u>1) Most rural Virginians whose homes are</u> located in areas that have underlying bedrock close to the surface (i.e. neighbors of the Proposed Green Ridge Landfill) rely on wells drilled into fractured bedrock as opposed to shallow wells drilled into the overburden above the bedrock. Any landfill ground-water monitoring system must consist of shallow wells in the overburden as well as deeper wells in the bedrock. Current DEQ regulations only require new landfills to develop a shallow aquifer monitoring system and fail to address the deeper bedrock wells. The below recommended regulation</p>	<p>The Department’s solid waste groundwater monitoring program and its sampling requirements are based on and remain consistent with requirements set forth by EPA in 40 CFR 258. Please note that EPA has defined the groundwater point of compliance as the uppermost aquifer at the edge of the solid waste management unit. Monitoring wells must be installed at that location to have the ability to detect any release from the unit as soon as possible. The commenter requests setting a point of compliance deeper (into bedrock) and this would conflict with the intent of EPA’s Subtitle D monitoring program.</p> <p>DEQ also points out that if it should be recognized that a groundwater release has taken place at the established point of compliance, additional monitoring wells must be installed in order to define the extent (in both the vertical and lateral dimensions) of the release as part of the initial steps in the corrective action process.</p> <p>With respect to the added sampling parameters suggested by the commenter, EPA provided its detailed rationale for setting the Subtitle D landfill sampling list (see discussion at 56 FR 196, pg. 51080-82). The list of constituents presented by the commenter is sourced from another State’s regulations, unrelated to EPA’s Subtitle D rule which forms the basis for the groundwater monitoring program in the VSWMR. The commenter failed to provide the basis for why the suggested additional constituents would make a groundwater monitoring</p>

<p>addresses this oversight. The below parameters were extracted from New Jersey's Private Well Testing Act that requires mandatory testing before a residential property with a well is sold.</p> <p>2) If bedrock residential drinking water wells exist in the vicinity of the new landfill, the landfill shall implement a groundwater monitoring system that draws ground water samples from an appropriate network of bedrock installed monitoring wells. These wells shall be sample semi-annually by an independent certified laboratory for the following parameters: total coliform, nitrate, iron, manganese, pH, VOC's, lead, arsenic, mercury, Gross Alpha Activity, 1,2,3-Trichloropropane, Ethyl Dibromide, and 1,2-Dibromo-3-chloropropane. The corresponding results shall sent to the DEQ and made available on a public website.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	<p>program any more effective than it is using the EPA defined sampling constituent list.</p> <p>No change has been made to the regulation in response to this comment.</p>
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<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 9:</u>                  1) The proposed Green Ridge Landfill (Mega Fill) will be a large complex industrial facility, complete with methane gas, that if constructed would be the third largest landfill on the East Coast. If adequate resources are not brought to bear quickly on a fire at this Mega Fill it could quickly get out of hand and result in an environmental catastrophe. Nearby Powhatan and Cumberland Fire Departments do not currently have the resources to respond to a fire at the 5000 ton per day Mega Fill. Neither of the departments own a 6000 gallon tractor trailer tanker/pumper and Petersberg, some 40 miles distant, is the nearest department that has such equipment. Powhatan's Deep Creek Fire Station (nearest the landfill) is manned by one full time fire fighter.                  2) The regulations must be revised to insure that adequate fire response capabilities exist. In order to receive a Certificate to Operate, the landfill shall employ the services of a Certified Emergency Manager (CEM) to assess the capabilities of Fire Departments in the localities in the vicinity of the proposed new landfill and determine if they can effectuate a safe, timely, and effective response to a fire at the landfill. If adequate local community response</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment.</p> <p>The other part of this comment provides suggested changes to address landfill fire control. However, the suggested changes, such as employing services to assess local fire response capabilities, or providing additional fire control resources to the local community, are operational decisions or agreements to be made by the facility and the locality. Changes were already incorporated into the proposed regulation to address fire control as recommended by the RAP consensus. For example, language was added to ensure that landfills follow the fire control plan when responding to fires, that landfill fires shall be effectively controlled and extinguished as soon as possible, and to require active landfills to provide annual training for their staff on the contents of the fire control plan to ensure that staff are prepared and knowledgeable of site-specific fire hazards and the steps to respond to a fire.</p> <p>The Department has determined that the requirements established in the proposed regulations are sufficient to protect the health, safety and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
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	<p>resources do not exist the CEM shall recommend an appropriate level of response readiness that can be achieved by furnishing additional resources to the local departments and/or by establishing an internal landfill fire response capability. The landfill shall pay for any additional fire resources required by local communities through written agreements with said communities and shall not receive a Certificate to Operate until the agreements are in place. If the landfill chooses to establish an internal fire response capability the resources required to maintain this capability will become an enforceable permit condition.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 10:</u>                  1) The proposed Green Ridge Landfill (Mega Fill) will be a large complex industrial facility, complete with methane gas, that if constructed would be the third largest landfill on the East</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment.</p> <p>The other part of this comment provides suggested changes to address operator licensing. However, the requirement for the facility to operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators is a statutory requirement, and the regulatory language is consistent with the statutory</p>

	<p>Coast. At the present time all sanitary landfills are required to have a Certified Landfill Operator with a Class II License. A PE license is not required to obtain a Class II License. Green Ridge estimates that the proposed 5000 ton per day operation will employ 35 individuals will cost far in excess of \$100,000,000.00 to build.</p> <p>2) Because of the size and complexity of Mega Fills a highly experienced and credentialed individual is required ensure proper construction and operation. Therefore the regulations must be revised to require new landfills in excess of a 3000 ton per day capacity to employ a Class II Certified Landfill Operator with a Virginia Professional Engineers license in either Civil or Environmental Engineering.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	<p>language (§10.1-1408.2 of the Code of Virginia). Changes to the Code of Virginia can only be accomplished through action by the Virginia General Assembly. In addition, 18VAC155-20-110.A.2 of the Department of Professional and Occupational Regulation’s Waste Management Facility Operators Regulations (which is not part of this regulatory amendment) requires an individual operating a facility that is defined in 9VAC20-81-10 as a sanitary landfill, industrial waste landfill, or construction/demolition/debris (CDD) landfill, to hold a Class II license. State law does not provide DEQ or the Virginia Waste Management Board with the authority to revise licensing criteria for waste management facility operators. Under §54.1-2211 of the Code of Virginia, the Board for Waste Management Facility Operators promulgates regulations and standards for the training and licensing of operators.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 11:</u> 1) The below excerpt from Section 140 wrongly permits landfill</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment.</p>

<p>operators up to 24 hours to bring in substitute heavy solid waste compaction and earth moving equipment to replace inoperable equipment. This is not acceptable for a 5000 ton per day Mega Fill such as the proposed Green Ridge Landfill that will operate 24/7. A smaller landfill could get by for 24 hours using a slow moving bulldozer that would normally spread cover soil to temporarily spread and compact trash plus spread cover if the much faster compactor was inoperable. This substitution would not keep up with the flow of trash at a large landfill. A mountain of uncompacted and uncovered refuse will be created in 24 hours. Adequate numbers and types of properly maintained equipment shall be available to a landfill for operation. Provision shall be made for substitute equipment to be available or alternate means implemented to achieve compliance with subdivision B 1, C 1, or D 1 of this section, as applicable, within 24 hours should the former become inoperable or unavailable. Operators with training appropriate to the tasks they are expected to perform and in sufficient numbers for the complexity of the site shall be on the site whenever it is in operation.</p>	<p>The other part of this comment provides suggested changes to address backup equipment availability at landfills. The requirement for substitute landfill equipment to be made available within 24 hours (should the former become inoperable or unavailable) exists in the current regulation, and the requirement was not changed as part of the proposed regulation.</p> <p>The commenter suggested requiring specific type of equipment to be used at large landfills. However, that is an operational decision to be made by the facility. In addition, changes were already incorporated into the proposed regulation to require landfill operations manuals to include “procedures to be employed during periods of non-operation or non-processing, including procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities” (9VAC20-81-485.A.5.e).</p> <p>The Department appreciates the suggestions, but has determined that the requirements established in the proposed regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
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<p>2) Therefore, for new landfills that will be accepting 3000 tons per day or more, adequate compaction and earth moving equipment shall be immediately available on site if a critical piece of compaction or earth moving equipment becomes inoperable or unavailable due to breakdown or maintenance. The critical equipment that must be immediately available shall include at a minimum a spare steeled wheeled solid waste compactor equivalent to a CAT 826, a spare bulldozer equivalent to a CAT D-8, a spare cover hauling piece of equipment with a minimum of 15 yard capacity, and a spare cover excavator/loader of a minimum of a 3 yard capacity. Spares will not sit idle for weeks at a time as standby equipment but shall be regularly used by rotating them into equipment usage during the week with the net result of each piece of critical equipment sitting idle during certain days of the week. For explanation and clarity of what is meant by spare the following example is given. If two steel wheeled compactors are required to keep up with solid waste flow the landfill operator will be required to have a total of three operational compactors on site with only two in use at any one time. Therefore, the three units would be</p>	
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	<p>rotated in and out of use during the week with two operating at any one time. If one were to break down the minimum amount of two compactors will still be immediately available.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p><u>Comment # 12:</u></p> <p>1) Because of the unlimited supply of garbage, the Proposed Green Ridge Landfill will attract all manner of scavengers including black bears, coyotes, red foxes, raccoons, opossums, skunks, seagulls, crows, turkey buzzards, vultures, wild dogs, feral cats, and rats. These animals will pose a nuisance and a public health/safety hazard to nearby residents as well as to their pets and farm animals. Daily cover and the proposed 24/7 operation will provide some mitigation but will not be completely effective.</p> <p>2) The Solid Waste Management Regulations must require that all new landfills develop and implement an effective scavenger</p>	<p>Part of this comment addresses concerns with a specific facility and is outside of the scope of this amendment.</p> <p>The other part of this comment provides suggested changes to address scavenger control at landfills. The commenter suggested requiring landfills to develop and implement a scavenger control strategy with specific control measures. However, the current regulations already require all landfills to effectively control vectors (living animals, insects, or other arthropods that transmit infectious disease from one organism to another) so that they do not constitute nuisances or hazards, (9VAC20-81-140) and for each landfill to describe methods for vector control in their operations manual (9VAC20-81-485). The exact methods the landfill uses to control scavenging and vectors is an operational decision to be made by the facility.</p> <p>The Department appreciates the suggestions, but has determined that the requirements established in the regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>control strategy including exclusionary fencing, trapping, depredation, harassment, and professional pest controllers. Said strategy shall be memorialized and made a condition of the Landfill's Solid Waste Permit.</p> <p>3) Pursuant to Executive Order 14 (as amended July 16, 2018) and §§ 2.2-4007.1 and 2.2-4017 of the Code of Virginia, the Department of Environmental Quality is conducting a periodic review and small business impact review of 9VAC20-81, Solid Waste Management Regulations. These comments are being submitted pursuant to the above Executive Order.</p>	
<p>Keith Buch, Powhatan, VA</p>	<p>The attached document indicates all of the individuals who made "citizen" comments during the 2019 review period and for some unexplained reason their comments were not addressed. There were no pro landfill or solid waste industry comments made during the 2019 review period.</p> <ol style="list-style-type: none"> <li>1) Keith Buch</li> <li>2) Michael Serato</li> <li>3) Ralph Mullins</li> <li>4) Kevin Halligan</li> <li>5) Laurie Halligan</li> <li>6) Francis Ronnau</li> <li>7) Victoria Ronnau</li> <li>8) Artour Saakian</li> <li>9) Christal Schools</li> <li>10) Timothy Kennel</li> <li>11) Keith Oulie</li> </ol>	<p>All public comments received on the VSWMR periodic review and NOIRA were distributed to the RAP on May 6, 2021, for their consideration in advance of their May 21, 2021 meeting.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Keith Buch, Powhatan, VA</p>	<p>Now that it is abundantly clear that substantial comments made by private citizens during</p>	<p>Per 9VAC20-11-70 B of the Public Participation Guidelines regulation, the agency shall determine when a regulatory advisory panel (RAP) shall be appointed and the composition of the RAP. The agency director determines who is appointed</p>

<p>the 2019 comment period were not addressed by the RAP, I would like to take this opportunity to focus on the RAP itself. Please refer to the below attachment regarding the six RAP appointments that were made.</p> <p>1) There were five (5) categories of individuals that composed the RAP. Solid Waste Industry, Citizen, Local Government, Landfill Consultants, and Environmental Organizations. There should have been at least two additional categories that included Academia (Colleges and Universities) as well as Environmental Health (Industrial Hygienists and Public Health Specialists).</p> <p>2) Only one Citizen appointment was made and yet two appointments were made under the Landfill Consultant category. Why were not two citizen appointments made to balance the two Landfill Consultant appointments?</p> <p>3) Of the six appointments that were made one was a Solid Waste Industry appointment, one was a county landfill manager under the Local Government appointment category, and two appointments were made under the Landfill Consultant category for a total of four appointments. The end result was that two thirds of the</p>	<p>to the RAP based on professional specialization or technical assistance per 9VAC20-11-70 A. Anyone may ask to be appointed to the RAP, but appointment is not guaranteed and is at the discretion of the agency director.</p> <p>All public comments received on the VSWMR periodic review and NOIRA were distributed to the RAP on May 6, 2021, for their consideration in advance of their May 21, 2021 meeting.</p> <p>No change has been made to the regulation in response to this comment.</p>
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	<p>appointments either operated landfills or provided consulting engineering services to landfills. This was hardly a balanced RAP.</p> <p>4) What were the selection criteria that were used to make the appointments?</p> <p>5) Were any of the appointments minorities?</p> <p>6) Who was the selection official who made the appointments?</p> <p>Based on the above, in order to avoid future legal challenges it is recommended that a new RAP be appointed to address the dozens of comments that were not addressed by the first RAP.</p>	
<p>Craig Coker, Coker Composting &amp; Consulting</p>	<p>9VAC20-81-320 Siting Requirements. The proposed Amendment 9 to the VSWMR would prohibit locating a composting facility (except for those only composting vegetative waste and yard waste) less than 1,200 feet from any airport's air operations area. The U.S. Department of Transportation, Federal Aviation Administration (FAA), in its Advisory Circular, "Hazardous Wildlife Attractants On or Near Airports" (#150/5200-33, 1997) notes the following setbacks for wildlife attractants (Sec. 1-3): a. Airports serving piston-powered aircraft. A distance of 5,000 feet is recommended. b. Airports serving turbine-powered aircraft. A distance of 10,000 feet is</p>	<p>The Department appreciates the suggestion and has revised the regulation to clarify the requirements based on composting feedstock.</p> <p>G.3. Composting facilities are prohibited on airport property. Off-airport composting facilities shall be located no closer than the greater of the following distances as defined by the FAA:</p> <ul style="list-style-type: none"> <li>a. 1,200 feet from any airport operations area for compost facilities accepting only yard waste and similar material which are not wildlife attractants; or</li> <li>b. The distance called for by airport design requirements for compost facilities accepting Category I – IV feedstocks which are wildlife attractants.</li> </ul>

	<p>recommended. c. Approach or Departure airspace. A distance of 5 statute miles is recommended, if the wildlife attractant may cause hazardous wildlife movement into or across the approach or departure airspace. Sec. 3-4 of that same document states: "composting operations should not be located closer than the greater of the following distances: 1,200 feet from any aircraft movement area, loading ramp, or aircraft parking space; or the distance called for by airport design requirements." The FAA notes that yard waste is "generally not considered a wildlife attractant", but I recommend you modify the proposed language at 9VAC20-81-320 to require Category I-IV composting facilities and composting facilities handling only vegetative and yard waste (and not other Category 1 feedstocks) not be located closer to airports than the recommended FAA Siting Criteria in Sec. 1-3 as noted above.</p>	
<p>Andrea Wortzel, Troutman Pepper Hamilton Sanders LLP (Troutman Pepper)</p>	<p>Industrial landfills are distinct from other types of landfills (municipal solid waste and construction demolition debris) because they are not accessible by the public, but are instead dedicated to waste generated during a specific manufacturing process. The waste does not decompose in the same way as municipal</p>	<p>This comment does not address a specific section of the proposed regulation; instead, it appears to address the sum of the changes to the regulation which affect industrial landfills. The proposed regulations were not intended to employ a "one-size-fits-all approach" to industrial landfills. The differences between industrial landfills and other types of landfills were considered during development of the regulatory amendment and discussed with the Regulatory Advisory Panel (RAP). For example, in consideration of RAP discussion and feedback, the amended regulation recognizes that the nature, type, and quantity of accepted wastes are unique to each industrial landfill and allows the department to evaluate alternate methods proposed by the facility to address the performance standards for cover. The department has observed an increase</p>

<p>solid waste. Thus, industrial waste does not settle nor generate odors, leachate, or methane gas in the same manner as municipal solid waste. Additionally, the operation of industrial landfills can vary significantly from industry to industry. As such, it is not practical to employ a one-size-fits-all approach to industrial landfills because the waste generated is so unique to the manufacturing process involved. These important distinctions are recognized in the existing regulations. VMA is concerned that these differences were not fully considered or factored in when the proposed regulatory changes were developed. During the RAP process, VMA suggested that a subgroup could be formed to discuss the impact of the proposed changes on industrial landfills. As noted in the Virginia Department of Planning and Budget's Economic Impact Analysis, the proposed changes will impact 20 active industrial landfills, and will have an adverse impact by increasing the net costs to companies operating those landfills. While VMA recognizes that there are always regulatory costs associated with managing solid waste, as discussed in more detail below, the additional measures proposed in this regulation do not have a corresponding</p>	<p>in the number and severity of occurrences of fires, odors, blowing litter, excess leachate generation, surface and subsurface erosion of waste, and releases of waste and leachate at industrial landfills. The new requirements are proposed in order to reduce the frequency of these conditions in order to be more protective of human health and the environment.</p> <p>No change has been made to the regulation in response to this comment.</p>
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	<p>environmental benefit. Thus, given the practical and financial impacts associated with the proposed changes, they should not be adopted.</p>	
<p>Andrea Wortzel , Troutm an Pepper</p>	<p>VMA has been an active participant in the regulatory advisory panel for the proposed revisions to the Solid Waste Management Regulations.<sup>1</sup>  <sup>1</sup> VMA also reviewed and commented on Proposed Guidance Memo No. LPR-SW-2021-01, which was ultimately withdrawn. That proposed guidance memo touched on several provisions of the Solid Waste Management Regulations. To the extent any changes are made to the proposed regulation to incorporate the provisions of the proposed guidance, this regulatory package should be subject to additional public notice and comment.</p>	<p>No changes were made to the proposed regulation to incorporate the provisions of the proposed guidance (LPR-SW-2021-01 – Guidance on the Director’s Determination for New Solid Waste Management Facility Permits and Modifications for Expansions &amp; Increases in Capacity) referenced by the commenter, which was withdrawn by the Department.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Andrea Wortzel , Troutm an Pepper</p>	<p><b>9VAC20-81-98.C.</b> (Use of Plastic Bags) The provisions of 9 VAC 20-81-98 relate to the use of appropriate containers for management of solid waste. However, Subsection C of this provision relates to single use plastic and paper bags. It is unclear who this provision applies to, and under what circumstances. It is residential households that typically use plastic garbage bags to store waste. That material is then collected and transported to municipal solid waste landfills.</p>	<p>The “appropriate container” requirements in 9VAC20-81-98 were added to clarify the conditional exemption under 9VAC20-81-95.D.10 which applies to the management of solid waste at the site of generation and convenience centers, and to clarify the conditional exemption under 9VAC20-81-95.D.20 which applies to the storage of solid wastes from an emergency cleanup. Language regarding single use plastic and paper bags is consistent with existing Departmental guidance (LPR-SW-2018-01 Frequently Asked Questions About Convenience Centers).</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>Thus, it is difficult to tell how or when this provision applies.</p>	
<p>Andrea Wortzel , Troutman and Pepper</p>	<p>9VAC20-81-140.B.21 (Annual Topographic Survey) Section 9 VAC 20-81-140.B.21 adds a requirement that all landfills that accept greater than 300 tons per day of waste must perform an annual topographic survey. Landfills that accept 300 tons per day or less must perform such survey on a biennial basis. Industrial landfills should be exempt from this requirement for the following reasons:</p> <ul style="list-style-type: none"> <li>• Overfilling/exceeding the waste boundary is more likely to occur in a MSW landfill because overfilling regularly occurs in order to account for the settling of the waste that takes place. Also, it is more common for MSW landfills to be allowed to place waste outside the permitted boundary on a temporary basis while new cells are being constructed.</li> <li>• Many industrial landfills have such low throughputs that an annual or even biennial survey requirement is unnecessary and would not serve an actual policy objective.</li> <li>• As reflected in DPB's Economic Impact Analysis, such surveys can cost as much as \$16,000 per year. No clear explanation has been provided by DEQ as to why such a requirement is needed for industrial landfills. If</li> </ul>	<p>The annual survey requirement is being added for multiple reasons: to determine areas of overfill or exceeding the waste boundary; to provide more accurate landfill disposal capacity information in the state to assist with the Director's Determination of Need; and to achieve more accurate reporting for the Solid Waste Information &amp; Assessment (SWIA) reporting. In order to obtain the landfill disposal capacity within the state all landfills, including captive landfills, need to be included. The Department recognized that an annual survey may not be needed for smaller facilities and incorporated two survey frequencies based on the permitted daily intake rate of the facility. The potential for overfilling/exceeding the waste boundary is possible at all landfills. Routine surveys while the facility is operating will lead to early detection of overfilling or exceeding the waste boundary when repairs should be easier and less costly as opposed to later on at closure when it may be harder or more costly to make repairs.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>DEQ’s concern is that such facilities are overfilled, or if DEQ wants industrial facilities to be more aware of when a landfill is coming close to reaching its final elevation, industrial landfills could be required to prepare a topographic survey when they are two years out from the predicted end of life, or when they are 80% full. There are more efficient and less costly ways to address this issue for industrial landfills.</p>	
<p>Andrea Wortzel , Troutman and Pepper</p>	<p><b>9VAC20-81-140.E</b> (Cover Requirements) Practical Considerations. The change that VMA is most concerned about is the requirement for industrial landfills to apply at least 6 inches of compacted soil on the waste at least once per week. Although the proposed regulation allows industrial facilities to seek approval for an alternate method of cover, it still requires cover to be applied on a weekly basis. DEQ indicates in the Background Document the following: “The department has observed an increase in the number and severity of occurrences of fires, odors, blowing litter, stormwater infiltration, excess leachate generation, surface and subsurface erosion of waste, and releases of waste and leachate at industrial landfills.” DEQ does not provide enough detail in this statement to justify a wide sweeping</p>	<p>The previous requirement for “periodic cover” was undefined (i.e. no minimum frequency or thickness). The absence of a requirement to provide cover at a specified frequency has resulted in working face areas not being minimized and larger quantities of waste material being exposed to the environment for longer periods of time. DEQ has observed various types of issues (odors, litter, surface and subsurface erosion of waste, fires, and releases of waste and leachate) at different types of industrial landfills, including both captive and non-captive, single-stream and mixed waste. Issues do not seem to be relegated to landfills of a certain size or waste type. DEQ has also received complaints from the public regarding industrial landfills (particularly regarding odors and fires) as development of residential and commercial properties continues to expand closer to existing landfills. Application of soil cover is a standard practice to control fires, odors, litter, minimize stormwater infiltration, and prevent erosion and displacement of waste.</p> <p>The Department considered all of the feedback from the Regulatory Advisory Panel meetings when developing this provision of the proposed regulation, which requires weekly cover at industrial landfills unless alternate methods (in lieu of weekly cover) are approved. The regulation contains the language “alternate methods” rather than just “alternate cover” in order to provide more flexibility to industrial landfills to use strategies and techniques that work best for the waste type, nature, and quantity unique to the specific landfill. While alternate methods may include an alternate weekly cover or alternate cover frequency (which could potentially be less frequent than weekly), this provision was also intended to allow industrial landfills the option to demonstrate that site-specific strategies other than cover can meet the same performance standards. The Department has determined that the requirements established in the proposed regulations are sufficient to protect the health, safety, and welfare of the public.</p>

<p>regulatory change for this class of landfill. This does not allow the regulated community to understand if this is occurring at all industrial landfills or a smaller subset of these landfills, or industrial landfills that manage a certain type of industrial waste. VMA is concerned that the proposed “one-size-fits-all” solution will introduce significant costs without necessarily resolving the underlying concerns stated. Currently, industrial landfills are not required to apply cover on a daily or weekly basis. Instead, cover must be applied periodically. This was incorporated into the existing regulations in recognition of the uniqueness of industrial landfills and their operation. Such landfills are typically more isolated from the public, are smaller, handle less waste and have waste that tends to be more inert with almost no odor or vermin issues. Additionally, the waste materials disposed of at an industrial landfill tend to be sludges or other materials that are not typically impacted by wind. Industrial facilities, instead of having a blanket requirement for cover material, must implement measures through operations and maintenance plans that address these concerns. This approach allows facilities to establish cost-effective means to manage the issues DEQ</p>	<p>In addition, the comment states that there is no requirement to divert runoff from intermediate cover; however, the proposed regulations do require that intermediate cover be graded to prevent ponding and promote surface runoff in order to minimize infiltration of water into solid waste cells.</p> <p>No change has been made to this regulation in response to this comment.</p>
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<p>has noted while recognizing the individual nature of the waste streams and landfills. Further, the regulations already require that one foot of compacted soil be placed as intermediate cover in areas left idle and not used for material disposal within 30 days to address concerns of erosion, fugitive dust, contact water and leachate generation, and structural integrity of the unit. The regulations also already identify particular industrial wastes, such as asbestos and fossil fuel combustion fly and bottom ash, that need additional or unique management requirements. If DEQ determines that additional cover is needed based on the specific type of waste handled at the landfill or operational impacts associated with a given industrial landfill, DEQ has the authority to require a facility to change its operations and maintenance manual to address the frequency and method of cover application for that particular landfill or waste material. Moreover, adding new cover material on a weekly basis may not address the issues identified by DEQ (fires, odors, blowing litter, stormwater infiltration, excess leachate generation, surface and subsurface erosion of waste, waste slides, compromised stability and releases of waste</p>	
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	<p>and leachate). For example, there is no requirement to divert runoff from intermediate cover to stormwater, so increasing the cover frequency doesn't guarantee leachate will be reduced. Leachate generation is not necessarily a problem for captive industrial landfills because their leachate is not as concentrated and they often have an onsite wastewater treatment system or access to a publicly-owned treatment works. VMA believes that each of the stated concerns can be adequately addressed on a case-by-case basis with the authority DEQ already has in the existing regulation. For all of these reasons, it is inappropriate to impose a blanket requirement of this nature on industrial landfills. It is also unlikely that this requirement will have any meaningful benefit for the vast majority of industrial landfills. It will, however, have a significant impact on the industries and the costs for managing these landfills.</p>	
<p>Andrea Wortzel , Troutman and Pepper</p>	<p><b>9VAC20-81-140.E</b> (Cover Requirements) Direct Cost. The costs associated with this proposed additional soil cover requirement are significant. One member, who operates two facilities with industrial landfills, estimates the cost associated with complying with this new soil cover requirement at \$2.7 million. (This estimate was calculated</p>	<p>The Department considered all of the feedback from the Regulatory Advisory Panel meetings when developing this provision of the proposed regulation. The Regulatory Advisory Panel agreed that costs are not the first priority for consideration and that the proposal was based on protection to human health and the environment.</p> <p>The requirement as written is for industrial landfills to meet certain performance standards – to control fires, odors, blowing litter, to minimize stormwater infiltration, and to prevent erosion and displacement of waste. The regulations specify that the default or standard acceptable method to comply with this requirement is to apply six inches of compacted soil cover on a weekly basis. However, landfills may demonstrate to the</p>

<p>assuming \$22/yd<sup>3</sup> for soil cover material, with placement cost estimated at \$5/yd<sup>3</sup>.) Neither the economic impact analysis nor the background document include estimates of costs for the 20 affected landfills mentioned in this action. Suitable cover soil is not readily available on all sites or in all geographic areas of the state. Soil is both expensive and creates logistical challenges depending on the location of the facility within Virginia. Given the potential operational and cost impacts associated with imposing such a requirement, greater consideration should be given to what problem is being addressed and whether a one-size-fits-all approach is appropriate. The proposal does allow for the use of alternative cover materials. While VMA appreciates this additional flexibility, as drafted there are extra layers of administration for operators and DEQ staff to obtain this flexibility. In the existing regulations, DEQ has the ability and authority to require additional measures from an operator if the periodic cover is not sufficiently addressing the concern on a case-by-case basis, requiring submission of whatever information is needed to secure the use of a new approach. In the proposed regulation, the new soil cover requirement</p>	<p>Department that other methods (which may be less costly than weekly soil cover) can meet the same performance standards.</p> <p>The commenter notes that the proposed regulation allows for the use of alternate cover materials, which could lower the cost of complying with the requirement. In addition to allowing alternate cover materials, the regulation also allows landfills the flexibility to demonstrate that alternate cover frequency (which may be less frequent than weekly) and/or site-specific strategies other than cover (which may be less costly than soil or alternate covers) can meet the same performance standards. The allowance for other options to comply with the requirement was intended to provide more flexibility to industrial landfills to use strategies and techniques that work best for the waste type, nature, and quantity unique to the specific landfill.</p> <p>No change has been made to the regulation in response to this comment.</p>
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	<p>applies unilaterally, and DEQ must evaluate and approve any alternative cover proposal. This will likely result in DEQ staff needing to manage a sudden and immediate influx of requests to evaluate alternative covers for multiple industrial landfills, rather than working directly with a select few landfills to address specific cover concerns. Additionally, adding in the option to use alternative materials does not address the fundamental concerns of industrial landfill owners regarding the significant impact of this requirement on the fill rate and operational costs.</p>	
<p>Andrea Wortzel, Troutman Pepper</p>	<p><b>9VAC20-81-140.E</b> (Cover Requirements) Landfill Life/Efficient Management of Resources. Frequently adding cover soil consumes an important natural resource (clean soil) for no clear environmental gain. Moreover, applying this additional soil cover will significantly impact air space within the landfill, shortening the life of these assets. Just using back of the envelope calculations, adding an additional 6 inches of fill per week translates to 26 feet per year across the active face of the landfill. For low run rate industrial landfills, adding weekly soil may actually result in the landfill containing more soil than industrial waste. The result of filling landfills more quickly through</p>	<p>The Department continues to recommend that any cover, including daily or weekly cover, be stripped back from the waste prior to filling with an additional lift of waste. The regulation has also been written to allow the use of alternative cover materials, alternate cover frequency, and alternate methods (other than cover) to meet the same performance standards. The use of soil cover is not intended to result in landfills using additional airspace, but to control fires, odors, blowing litter, and minimize infiltration of water into the solid waste cells to prevent erosion and displacement of waste, when other methods are not effective in meeting these performance standards.</p> <p>No change has been made to this regulation in response to this comment.</p>

	<p>adding this soil material is that new landfills (or an expansion of existing landfills) will be needed earlier. One VMA member has estimated that adding this amount of fill will result in a reduction of nearly 30% of its landfill life. Such reductions in available landfill life will require these industries to site and build new landfills sooner than expected – an outcome that is fraught with regulatory uncertainty, both for the landfill owners and the communities in which these new landfills may need to be sited. Thus, this requirement is an inefficient and potentially wasteful use of natural resources, and it will detrimentally impact the environment by resulting in the creation/expansion of landfills that is only necessary as the result of the loss of landfill capacity from this new requirement. This result runs counter to the goals of the waste management program and should not be adopted.</p>	
<p>Andrea Wortzel , Troutm an Pepper</p>	<p><b>9VAC20-81-250</b> (Groundwater Monitoring – Table 3.1). The proposed changes add a new Column C to Table 3.1, which outlines the constituents for which groundwater monitoring must be conducted. Column C represents constituents that do not yet have a regulatory standard. It includes per- and polyfluoroalkyl substances (PFAS and related constituents).</p>	<p>The proposed modification to the groundwater sampling list is a result of requirements within Code of Virginia § <a href="#">32.1-169</a> (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL’s (HB 1257 and HB 586) for a certain list of constituents.</p> <p>The fact that the Virginia Department of Health may choose to set MCLs for additional PFAS constituents, not specifically named in the House Bills referenced above, based on the results of a surface water and groundwater sampling study completed within the Commonwealth, is not a limitation to adding a VSWMR requirement to begin sampling for the</p>

	<p>There is no need for this change, and it is likely to create confusion. DEQ has the authority to require sampling where there is cause for a site specific evaluation, and also where there is a need to gather data to determine whether to establish a standard. Moreover, if a standard is promulgated in the future, sampling is automatically required. But adding a monitoring requirement now, when there is no standard and there are other processes underway to identify the sources, presence and need for a standard, is premature. Including this provision now is likely to create confusion because it is unclear what action or implication results from this sampling data, given that there is no applicable regulatory standard or requirement associated with it.</p>	<p>constituents already identified (by name) within the existing passed legislation.</p> <p>The addition of Column C to the proposed regulation does not require sampling and analysis of the proposed constituents to begin prior to the Virginia Department of Health promulgating MCLs. The proposed VSWMR regulation will require the sampling for (and analysis of) the list of constituents identified in the proposed regulation as soon as the Virginia Department of Health completes the MCL promulgation process now required by the Code of Virginia.</p> <p>The added Column C groundwater constituents are found in common commercial and household products which are discarded as municipal solid waste and therefore can become components of landfill leachate. The recognition of, and response to any impacts on human health and the environmental are determined by the sampling and analysis for these constituents as part of a regulated landfill's groundwater monitoring program. The sole intent of the groundwater monitoring program is to determine whether leachate is being released from the landfill.</p> <p>For further clarification, the Department will add a footnote to Table 3.1 stating: "<i>The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL's</i>".</p>
<p>Andrea Wortzel , Troutman and Pepper</p>	<p><b>Implementation.</b> It is unclear when the new regulatory requirements will take effect for existing facilities. If the new cover requirements take effect, industrial facilities will likely need to find sources for the soil cover material, reconfigure operations at their facilities, and train staff on the new requirements. Additionally, facilities will need time to prepare requests for alternative cover requirements and DEQ will need adequate time to evaluate those requests to allow for efficient transition and</p>	<p>This regulatory action is to be effective as provided in the Administrative Process Act. After the final regulation is approved by the Waste Management Board, the regulation undergoes Executive Branch Review by the Office of the Attorney General, Department of Planning and Budget, Secretary of Natural and Historic Resources, the Office of Regulatory Management, and the Governor's office. After receiving the Governor's approval, the final regulation is submitted to the <i>Virginia Register of Regulations</i> to be published for a thirty day final adoption period, after which the regulation becomes effective.</p> <p>The Department has already been providing training on the proposed regulation and intends to provide compliance assistance to the regulated community to help facilities understand the final regulation.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>implementation time. Clarification about when these requirements, if adopted, will take effect would be helpful.</p>	
<p>Andrea Wortzel, Troutman and Pepper</p>	<p>As indicated above, VMA is concerned about the cost and operational impacts the proposed changes will have on industrial landfills. Of greatest concern are the changes to the cover requirement. VMA believes that the concerns DEQ has stated it is trying to address occur rarely and can be addressed on a case-by-case basis under DEQ's existing authority and regulations. VMA requests that DEQ reconsider its approach in these sections. If DEQ still believes that these additional requirements should be adopted, then VMA recommends that, instead of adopting the changes as part of the current regulatory process, DEQ form a new regulatory advisory panel focused on industrial landfills.</p>	<p>See responses to above comments regarding industrial landfill cover requirements. The Department has determined that the requirements established in the proposed regulations are sufficient to protect the health, safety, and welfare of the public while also affording landfills the flexibility to demonstrate that the use of site-specific methods and strategies may be able to meet the same performance standards as weekly cover.</p> <p>No change has been made to this regulation in response to this comment.</p>
<p>Carroll Courtenay, Southern Environmental Law Center; Phillip Musegas, Potomac Riverkeeper Network; Anna Killius,</p>	<p>As we noted in our comments on the notice of intended regulatory action (NOIRA) for this amendment (Attachment A to this letter), landfills are a documented source of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane pollution. This pollution can concentrate in landfill leachate and contaminate surrounding groundwater, so we asked the Board and DEQ to amend the solid waste management</p>	<p>The Department notes that it reviewed both "timing" options during regulatory development, but chose the latter option because prior to the promulgation of an MCL by the Virginia Department of Health (or under the federal Clean Drinking Water Act), owner/operators would be required to compare the sampling results against natural site background, or risk-based Alternate Concentration Limits (ACLs). These benchmarks would only remain in place until an MCL is promulgated (which would then supersede ACL use). This would mean owner/operators would be faced with changing groundwater benchmarks, which may trigger potential corrective actions defined under 9 VAC 20-81-260.</p> <p>To avert this uncertainty, the requirement to sample and analyze and respond to the constituents listed in Column C is proposed to commence upon the promulgation date of the Virginia Department of Health MCLs. Because the Virginia Department of Health MCL promulgation is required by Statute, and is currently under way, the Department does not believe</p>

<p>James River Association; Chris Leyen, Virginia League of Conservation Voters, and Patrick Calvert, Virginia Conservation Network (C. Courtenay, SELC; P. Musegass, PRN; A. Killius, JRA; C. Leyen, VLCV; P. Calvert, VCN)</p>	<p>regulations to account for the potential for PFAS and 1,4-dioxane contamination. We are disappointed to see that under its proposed amendment, DEQ would not require groundwater monitoring of PFAS and 1,4-dioxane until federal or state drinking water maximum contaminant levels (MCLs) for these contaminants are adopted and would not require monitoring of PFAS and 1,4-dioxane in landfill leachate at all. MCLs and other regulatory actions outside of DEQ's solid waste management program are not necessarily prerequisites to monitoring for these contaminants under the solid waste management regulations. Importantly, requiring monitoring for PFAS and 1,4-dioxane in groundwater and landfill leachate would provide information about the occurrence of these chemicals in Virginia's landfills and environment and help to inform regulatory actions in the future.</p>	<p>there is an additional risk to human health and the environment during this interim timeframe, noting that many of the regulated landfills in the Commonwealth are already in groundwater corrective action for exceedances of volatile organic compounds commonly found in landfill leachate, regardless of whether proposed Column C constituents are additionally present, but not yet sampled for.</p> <p>The Department does not concur with the statement that there is "<i>value in monitoring alone</i>" in the absence of MCLs, noting the General Assembly specifically required the Virginia Department of Health (HB 586) to collect sampling data as a means of determining the occurrence (and concentrations) of the chemicals referenced by the commenter in Virginia's surface and groundwater. This was not the Department of Environmental Quality's role. Additionally, MCLs promulgated by the Virginia Department of Health will be done so based on the data collected during the study reference above, and the Department of Environmental Quality will apply those standards once promulgated. Groundwater data collected from landfills, after MCL promulgation, will be used to determine whether landfill sites need to initiate groundwater corrective actions. No additional data (i.e., sampling for the sake of sampling) is needed to "<i>inform DEQ's future regulatory actions to protect human health and the environment</i>".</p> <p>For further clarification, the Department will add a footnote to Table 3.1 stating: "<i>The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL's</i>".</p>
<p>C. Courtenay, SELC; P. Musegass, PRN; A. Killius, JRA; C. Leyen, VLCV; P. Calvert, VCN</p>	<p>As discussed in our comments on the NOIRA, PFAS and 1,4-dioxane are man-made chemicals that have significant human health and environmental impacts. Two of the most commonly studied PFAS, perfluorooctanoic acid (PFOA) and perfluorooctyl sulfonate (PFOS), have been found to cause developmental effects in</p>	<p>See relevant response above pertaining to PFAS.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>fetuses and infants, kidney and testicular cancer, liver malfunction, hypothyroidism, high cholesterol, ulcerative colitis, lower birth weight and size, obesity, decreased immune response to vaccines, reduced hormone levels and delayed puberty and studies show that many of these same health outcomes result from exposure to other types of PFAS. PFAS are extremely resistant to breaking down in the environment, can travel long distances, and bioaccumulate. 1,4-dioxane is classified as likely to be carcinogenic by the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Health and Human Services, and 1,4-dioxane's unique attributes means it can spread quickly once it is released into the environment. Due to the widespread use and subsequent disposal of products and byproducts containing PFAS and 1,4-dioxane, landfills can be significant sources of PFAS and 1,4-dioxane pollution through a number of pathways, including groundwater contamination, landfill leachate, and landfill air emissions.</p>	
<p>C. Courtenay, SELC; P. Musegass,</p>	<p>DEQ proposes to require PFAS and 1,4-dioxane groundwater monitoring only after federal or state MCLs are established for the contaminants. The groundwater monitoring</p>	<p>See relevant response above pertaining to PFAS.  No change has been made to the regulation in response to this comment.</p>

<p>PRN; A. Killius, JRA; C. Leyen, VLCV; P. Calvert, VCN</p>	<p>provisions, however, explicitly provide other mechanisms for establishing groundwater protection standards that are not reliant on MCLs. For constituents “for which no MCL has been promulgated,” where the landfill owner finds a statistically significant increase over background during certain monitoring, the landfill owner or operator “shall” submit a proposed groundwater protection standard, and DEQ “shall” establish such a standard, based on site-specific background concentration values or risk-based alternate concentration levels.<sup>6</sup> This indicates that the establishment of federal or state MCLs need not be a prerequisite to requiring monitoring or developing groundwater protection standards for PFAS and 1,4-dioxane. To be clear, while establishing groundwater protection standards for PFAS and 1,4- dioxane is important, there is also value in monitoring alone. Regulatory agencies, including DEQ, have pointed to a lack of occurrence data as an impediment to developing regulations to control this type of contamination. Requiring landfills to sample for PFAS and 1,4-dioxane would provide DEQ with important information about the occurrence of these chemicals in groundwater surrounding landfills, helping to inform DEQ’s future</p>	
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	<p>regulatory actions to protect human health and the environment.</p>	
<p>C. Courtenay, SELC; P. Musegass, PRN; A. Killius, JRA; C. Leyen, VLCV; P. Calvert, VCN</p>	<p>We are disappointed to see that DEQ and the Regulatory Advisory Panel (RAP) convened to review the regulations only took up the issue of PFAS and 1,4-dioxane groundwater contamination. Narrowing the scope of the review to this sole pollution pathway means DEQ and the RAP failed to consider the need for broader regulation of PFAS and 1,4-dioxane contamination in the solid waste management process, including in landfill leachate. As we noted in our comments on the NOIRA, by their terms, the solid waste management regulations already regulate the discharge of PFAS and 1,4-dioxane through landfill leachate disposal because landfills are prohibited from “caus[ing] a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act (33 U.S.C. § 1251 et seq.), including, but not limited to, the VPDES requirements and the Virginia Water Quality Standards (9 VAC 25-260).” In practice, however, the discharge of these contaminants remains uncontrolled. Establishing an explicit landfill leachate monitoring requirement would generate information about the</p>	<p>The Department acknowledges the concerns related to PFAS and 1,4-dioxane in landfill leachate. However, as the commenter noted, the current regulation already prohibits landfill discharges that violate any requirements of the Clean Water Act, including, but not limited to, the Virginia Pollutant Discharge Elimination System (VPDES) requirements and Virginia Water Quality Standards. The acceptance and treatment of leachate by wastewater treatment plants, and any discharges to state waters from surface water or stormwater runoff, would be regulated by water related regulations, not the Solid Waste Management Regulations.</p> <p>Current work is being done by VDH and EPA regarding the establishment of Maximum Contaminant Levels (MCLs) for PFAS and 1,4-dioxane, which may result in amendments to related regulations outside of the DEQ solid waste management program.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>occurrence of these chemicals in landfill leachate, promote the disclosure of these chemicals in discharges (as the Clean Water Act requires before granting a VPDES permit), and give landfill operators and DEQ more information about how best to manage landfill leachate in the future.</p>	
<p>C. Courtenay, SELC; P. Musegas, PRN; A. Killius, JRA; C. Leyen, VLCV; P. Calvert, VCN</p>	<p>It is important to note that the absence of analytical methods is not a limiting factor to requiring PFAS and 1,4-dioxane monitoring for groundwater and landfill leachate. For PFAS, the EPA has developed draft method 1633 which is a laboratory validated method that tests for “40 PFAS compounds in wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate, and fish tissue.” Although it is currently a draft method, EPA has already recommended that this method be used in the National Pollutant Discharge Elimination System program. For 1,4-dioxane there are multiple methods— including EPA SW-846 methods— available for testing for this contaminant in groundwater and landfill leachate</p>	<p>The current absence of EPA approved analytical methods played no role in the Department’s decision to trigger the initiation of sampling requirements to the promulgation of MCLs by the Virginia Department of Health. The DEQ also notes that EPA is making progress in assessing and approving analytical methods with the necessary accuracy to detect PFAS in groundwater samples.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Joseph Montello, Republic Services, Inc.</p>	<p>It appears VADEQ is proposing that the proposed Column C constituents (1,4-dioxane and PFAS (6 parameters)) be required to be analyzed during every Initial/ Detection/ Assessment Monitoring</p>	<p>The commenter asserts that 1,4-dioxane and PFAS are not appropriate “<i>indicator parameters</i>” during Detection monitoring but provided no supporting evidence. This claim also conflicts with EPA’s previously stated intent behind the list of constituents found within the Subtitle D Detection monitoring program (see discussion at 56 FR 196, pg. 51075-77). Specifically, EPA defined the parameters included on that Detection monitoring list as “<i>those parameters that the Agency</i></p>

<p>event. We strongly believe that rather than adding these parameters to the rules, VADEQ should manage investigation of these parameters like other States have done. The parameters are not listed in USEPA Subtitle D regulations which are the basis for State Municipal Solid Waste (MSW) programs. As such, some other States have required MSW Landfills to conduct screening sampling for these parameters for their presence and concentrations. Additional monitoring and responses then depend on the results of the screening sampling. This approach has been effective in identifying issues that require follow up and avoiding the burden and complications of long-term, routine sampling where it is unwarranted. If VADEQ can appropriately justify that the Column C parameters need to be added to the rules, they should not be required in detection monitoring. Given the nature of these parameters, they are not appropriate or needed as indicator parameters during detection monitoring. They should only be required as screening sampling for presence during initial assessment monitoring, similar to the current Column B constituents. The need for continued, repeated monitoring during assessment</p>	<p><i>believed provided a reliable means of detecting the possible presence of releases from MSWLFs”.</i></p> <p>The constituents found in proposed Column C meet this technical criteria because they are expected components of municipal solid waste. PFAS resist breaking down in the environment and therefore make excellent tracer constituents if released from the landfill. 1,4-dioxane is classified as a likely carcinogen by EPA and the U.S. Department of Health and Human Services, and displays chemical characteristics that permit quick migration once it is released into the subsurface environment.</p> <p>Past and present commercial and home use (and subsequent disposal) of products and containing PFAS and 1,4-dioxane make them likely to be present in MSWLF leachate. The sole purpose of implementing a Detection monitoring sampling program is to identify whether leachate has been released to the environment. As such, the constituents proposed for Column C meet the criteria to be included on the Detection monitoring sampling list.</p> <p>The Department disagrees with the assertion that the Department must justify the need for adding additional sampling constituents to the landfill groundwater monitoring program. The proposed modification to the groundwater sampling list is a result of requirements within the Code of Virginia § 32.1-169 (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL's (HB 1257 and HB 586) for a certain list of constituents.</p> <p>No change has been made to the regulation in response to this comment.</p>
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	should depend on initial assessment screening results.	
Joseph Montello, Republic Services, Inc.	Regulation 210 G: <u>Leachate control - sampling and analysis.</u> Requirements for facilities to conduct sampling and analysis to characterize and demonstrate the presence or absence of leachate in a surface water or stormwater collection system or other receptor if a release or discharge of leachate is suspected should be reasonable and scientifically based depending on the specific circumstances.	The Department acknowledges and agrees with the commenter’s statement. A specific regulatory change was not requested. The Department has determined that the language in the proposed regulations is sufficient and clear.  No change has been made to the regulation in response to this comment.
Joseph Montello, Republic Services, Inc.	Regulation 250 A 3 c: Groundwater Monitoring - Well construction. We generally agree that the site-specific methods for monitoring well installation and construction should be described within the groundwater monitoring plan; however, revisions to the existing groundwater monitoring plans to attain compliance with the rule should be required at the time of permit renewal and/or within a reasonable timeframe (e.g., 180 days) of rule adoption for existing facilities.	Proposed language changes in 250.A.3.c reorganize existing requirements and do not address or establish the specific timing of updating a groundwater monitoring plan. That timing is typically set in the facility Permit. Additionally, the Department notes that the proposed language changes in 250.A.4.a include adding a formal title to the document to be submitted, it does not address the specific timing of updating a groundwater monitoring plan. That timing is typically set in the facility Permit.  No change has been made to the regulation in response to this comment.
Joseph Montello, Republic Services, Inc.	Regulation 250 A 4 a: Groundwater Monitoring - Quality Assurance and Control. We generally agree that quality assurance and control should be described within the groundwater monitoring plan; however, revisions to the existing groundwater	See relevant response pertaining to groundwater monitoring plan above.

	<p>monitoring plan to attain compliance with the rule should be required at the time of permit renewal and/or within a reasonable timeframe (e.g., 180 days) of rule adoption for existing facilities.</p>	
<p>Joseph Montello, Republic Services, Inc.</p>	<p>Regulation 250 A 4 b (1), (2), (3): Groundwater Monitoring-Analytical Methods. Language has been added to specify that EPA SW-846 methods are required for constituents found in Columns A and B of Table 3.1. We disagree with solely using EPA SW-846 methods for existing facilities where non-EPA SW-846 methods have historically been in use to establish statistical background at defined reporting limits. Facilities have made a concerted effort to keep previously accepted analytical methods in place for existing facilities to avoid the possibility that changes in analytical methods will result in statistically different data simply because the method was changed.</p>	<p>The comment pertains to the current requirement to use SW-846 analytical methods for all constituents found in Column A and B. This requirement exists as written in the current regulation and is not revised in the proposed regulation. The proposed language allows Column C constituents to be analyzed by non SW-846 methods since these constituents are not identified in EPA’s Subtitle D rule (40 CFR 258).</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Joseph Montello, Republic Services, Inc.</p>	<p>Regulation 250 A 4 f: Groundwater Monitoring - Sampling and statistics - collection of groundwater samples by bailers. The proposed rule revision states - <i>The collection of groundwater samples via dedicated bailers is prohibited unless the department has issued written approval to a site-specific request demonstrating a geotechnical need,</i></p>	<p>To remove any unintended confusion related to the use of the term “<i>dedicated</i>” in the proposed regulatory text, that word has been removed from the text of the proposed regulation.</p>

	<p><i>certified by a qualified groundwater scientist, submitted by the owner or operator. We request clarification on the term “dedicated bailers” and believe that no written approval should be needed to use disposable, single-use bailers for the collection of samples where appropriate (example - sampling wells with minimal water column height or low yield).</i></p>	
<p>Joseph Montello, Republic Services, Inc.</p>	<p>Regulation 250 B 2 a: Groundwater Monitoring - Detection monitoring sampling requirements. The proposed rule states facilities in detection monitoring would be required to sample for constituents in Column A and Column C of Table 3.1. It appears the proposed rules state the proposed Column C constituents (1,4-dioxane and PFAS (6 parameters)) must be analyzed during background sampling and during every detection monitoring event. As discussed in our first/global comment, screening sampling for these parameters rather than adding them to the rules for routine sampling is a more appropriate approach. If VADEQ can justify the need to add these parameters to the rules, Column C sampling should only be required when assessment monitoring is needed, in alignment with the current requirements for sampling Column B constituents.</p>	<p>The commenter asserts that 1,4-dioxane and PFAS are not appropriate “<i>indicator parameters</i>” during Detection monitoring but provided no supporting evidence. This claim also conflicts with EPA’s previously stated intent behind the list of constituents found within the Subtitle D Detection monitoring program (see discussion at 56 FR 196, pg. 51075-77). Specifically, EPA defined the parameters included on that Detection monitoring list as “<i>those parameters that the Agency believed provided a reliable means of detecting the possible presence of releases from MSWLFs</i>”.</p> <p>The constituents found in proposed Column C clearly meet this technical criteria because they are expected components of municipal solid waste. PFAS resist breaking down in the environment and therefore make excellent tracer constituents if released from the landfill. 1,4-dioxane is classified as a likely carcinogen by EPA and the U.S. Department of Health and Human Services, and displays chemical characteristics that permit quick migration once it is released into the subsurface environment.</p> <p>Past and present commercial and home use (and subsequent disposal) of products containing PFAS and 1,4-dioxane make them likely to be present in MSWLF leachate. The sole purpose of implementing a Detection monitoring sampling program is to identify whether leachate has been released to the environment. As such, the constituents proposed for Column C meet the criteria to be included on the Detection monitoring sampling list.</p> <p>The Department disagrees with the assertion that the Department must justify the need for adding additional sampling constituents to the landfill groundwater monitoring program. The proposed modification to the groundwater sampling list is a result of requirements within Code of Virginia § 32.1-169 (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory</p>

		<p>change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL's (HB 1257 and HB 586) for a certain list of constituents.</p> <p>No change has been made to the regulation in response to this comment.</p>
Joseph Montello, Republic Services, Inc.	<p>Regulation 250 B 1 e: Monitoring for sanitary landfills. Proximity to wetlands. Facilities should be allowed to propose and demonstrate the effectiveness of semi-annual groundwater sampling, rather than a blanket requirement of quarterly sampling, at facilities located within or near resource protection areas (e.g., wetlands).</p>	<p>The current referenced applicable requirements are sourced from §10.1-1408.5 of the Code of Virginia and thus cannot be changed in the regulation.</p> <p>No change has been made to the regulation in response to this comment.</p>
Joseph Montello, Republic Services, Inc.	<p>Regulation 250 B 2 a (1) (a): Groundwater Monitoring - Detection monitoring program sampling requirements-initial sampling. The proposed regulation allows facilities to collect eight independent background samples. We generally agree with the collection of eight independent samples; however, request that facilities be allowed to collect the samples over a timeframe of two years to provide for seasonal and temporal variation in the background data.</p>	<p>This suggestion may have merit at some landfills based on site specific conditions, and such action would be approvable on a case-by-case basis working with the appropriate Regional Office. Since the proposed VSWMR text already allows for longer timeframes upon approval of the Director, no further regulatory changes are needed. Requests such as these are better handled through the Variance procedure already defined in the VSWMR where site-specific conditions can be taken into account during the request and approval process.</p> <p>No change has been made to the regulation in response to this comment.</p>
Joseph Montello, Republic Services, Inc.	<p>Regulation 250 B 3 b (1) &amp; f (1): Groundwater Monitoring-Assessment monitoring program-well subsets; Evaluation and response-revaluation to return to detection monitoring. Language has been added to the regulation to allow the Director to approve a subset of wells to remain in detection monitoring when other monitoring</p>	<p>The allowance to reduce or eliminate sampling constituents is already available in the VSWMR. This option is sourced from 40 CFR 258.55.(b) and approvals of such requests are contingent on an owner/operator proving the requested constituents are not <i>“reasonably expected to be in or derived from waste contained in the unit”</i>. DEQ notes that the results of past groundwater sampling events are not proof of an absence of a chemical in the waste mass.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>wells are in assessment monitoring. We agree with the allowance of a subset of wells to remain in detection monitoring when analytical results indicate the lack of Column B (and Column C, if applicable) constituent detections; however, encourage DEQ to allow facilities to propose a reduced list of assessment constituents (i.e., based on lack of detection after sampling for a certain number of events). Additionally, we request that the DEQ further clarify the proposed rule language for facilities to have a clear path to obtaining an approved subset of wells to remain in detection monitoring.</p>	
<p>Mike Lawles, Draper Aden Associates</p>	<p><b>9VAC20-81- 95.D.16.</b> It is unclear on the choice of the limit of 5 days per quarter. Suggest elimination of the limit. This language appears in other references in these Draft regulations and the same comment would apply.</p>	<p>The commenter suggested eliminating the 5-day per quarter open burning limit but did not provide a basis for eliminating the requirement. Section 10.1-1410.3 of the Code of Virginia requires the Department to develop policies and procedures to allow for the infrequent burning of vegetative waste at permitted landfills in post-closure care, and requires the Department to specify the frequency of the burning allowed. Policies and procedures were developed and implemented beginning in 2007 through Departmental Guidance (LPR-SW-01-2007 Vegetative Waste Burning at Closed Landfills) to include a 5-day per quarter limit. The proposed regulation incorporates the 5-day per quarter limit at both active and closed permitted landfills for consistency with existing agency guidance.</p> <p>The open burning exemptions were also modified to be consistent with open burning requirements for Volatile Organic Compound (VOC) Emissions Control Areas found in regulations adopted by the State Air Pollution Control Board and to be more protective of human health and the environment.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawles, Draper Aden</p>	<p><b>9VAC20-81-98.A-C.</b> Appropriate containers. This regulation is obviously aimed at waste collection systems and</p>	<p>The intent of the changes in the proposed regulations was not to take the place of localities in managing or overseeing convenience centers but rather to specify and clarify the conditional exemption for management of solid waste at convenience centers. Because the regulations do not require</p>

<p>Associates</p>	<p>collection sites specifically. Language is very subjective - using terms like "appropriate" and "adequate". Is it the intent of DEQ to begin enforcement using these regulations on convenience/ collection sites or will this continue to be a function of local government? Unclear on the need for language relative to single use plastic or paper bags. What is the context for this regulation? Again, enforcement by DEQ or by local governments? Relationship of this language to local ordinances? Would recommend deleting this language and, if needed, reference local ordinances.</p>	<p>convenience centers to obtain a solid waste permit, DEQ does not routinely inspect convenience centers or provide regulatory oversight of operations at those sites. The primary responsibility to manage and oversee activities at convenience centers lies within the purview of the locality or entity that owns and operates the site. The current regulation (under 9VAC20-81-95.D.10) also states that management of solid waste in appropriate containers in certain scenarios is exempt; however, the VSWMR does not indicate what constitutes an appropriate container. The "appropriate container" requirements in 9VAC20-81-98 were added to clarify the conditional exemption criteria under 9VAC20-81-95.D.10 that applies to solid waste at convenience centers and at the site of generation. Language regarding single use plastic and paper bags is consistent with existing Departmental guidance (LPR-SW-2018-01 Frequently Asked Questions About Convenience Centers).</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawles, Draper Aden Associates</p>	<p><b>9VAC20-81-120.A-F.</b> Siting requirements. The upfront documents (under estimated benefits and costs) to the draft regulations (page 1706) state the following: "The proposed setback requirements are prospective in that the current landfills would be grandfathered from the revised setback distances." However, by using the term "all", DEQ in the regulations is not recognizing these current landfills which were permitted under approved Part As and which may or may not meet the requirements of this section for setbacks for waste management boundaries. Is there a mechanism for grandfathering older facilities or are they</p>	<p>Section 9 VAC 20-81-120.A clarifies that all landfills will be governed by the standards set forth in the section. The following requirements outlined in B thru F clarify the applicability of the specific criteria. These sections clarify the applicability to new and/or expanded waste management unit boundaries. Expansion is clearly defined in Section 9 VAC 20-81-10 as the horizontal expansion of the waste management boundary as identified in the Part A. These requirements would not be applicable to already permitted waste management unit boundaries as defined in their existing Part A approval. It would only apply to new facilities or newly expanded waste management boundaries.</p> <p>No change has been made in response to this comment.</p>

	going to be mandated to modify their permits?	
Mike Lawles, Draper Aden Associates	<b>9VAC20-81-120.J.</b> Airport safety. Change from 5 mile to 6 mile seems to be in keeping with FAA requirements but may not match EPA Subtitle D regulations. Has the consensus between regulations been verified?	The Wendell H. Ford Aviation Investment and Reform Act for the 21 <sup>st</sup> Century (Ford Act), Pub. L. 106-181 (49 U.S.C. 44718), prohibits the "construction or establishment" of new MSWLFs after April 5, 2000, within six miles of certain smaller public airports. This information is reflected on-line at the EPA website and Code of Federal Regulations. ( <a href="https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-258/subpart-B/section-258.10">https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-258/subpart-B/section-258.10</a> )  No change has been made in response to this comment.
Mike Lawles, Draper Aden Associates	<b>9VAC20-81-130.H.</b> [... survey benchmarks]. While it is appropriate for landfills to be on a recognized and consistent datum, there are still older facilities working off of site specific datum. Is it the intent of DEQ to require any landfills not on the cited datum to go to the expense to update their datum and survey information or can these sites petition for a variance to this regulation? What does "latest industry standard" mean – which industry? A specific citation for this should be provided.	The goal is to have landfill facilities use a standard survey coordinate system. The latest industry standard would be those procedures and practices utilized by licensed land surveyors or geographic information systems. Section 9 VAC 20-81-130.H has been updated to clarify the industry standards per the recommendation.
Mike Lawles, Draper Aden Associates	<b>9VAC20-81-130.I.</b> Surface water runoff. What does "current available rainfall intensity data" mean and published by whom? Clarification needed.	Atlas 14 data for Virginia and Predictive Rainfall Intensity – Density Frequency curves are maintained by the National Oceanic and Atmospheric Administration (NOAA). The intent is that the most recent available information should be used for stormwater management planning. The sources for this data have not been specified to allow for flexibility since reliable data may be available from multiple sources.  No change has been made to the regulation in response to this comment.
Mike Lawles, Draper Aden Associates	<b>9VAC20-81-130.I.4.</b> [Erosion and sediment control.] What does "minimum standards and specifications" mean? Is this meant to reference specifically 9VAC25-840-40.	The Department did not intend to reference a specific section of the Erosion and Sediment Control Regulations or to reference the Erosion and Sediment Control Handbook. These measures are not part of the solid waste permit but are addressed through another agency program. The intent of the language in the proposed regulations was to highlight that the Erosion and Sediment Control Regulations may be applicable to construction of new landfill cells.

	<p>Minimum Standards or the Virginia Erosion and Sediment Control Handbook?</p>	<p>In consideration of this comment, and to avoid confusion, the text has been revised to delete “and the minimum standards and specifications” from the end of the statement found in 9VAC20-81-130.1.4.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.B.5.b.</b> It is unclear on the choice of the limit of 5 days per quarter. Suggest elimination of the limit.</p>	<p>The commenter suggested eliminating the 5-day per quarter open burning limit but does not provide a basis for eliminating the requirement. Section 10.1-1410.3 of the Code of Virginia requires the Department to develop policies and procedures to allow for the infrequent burning of vegetative waste at permitted landfills in post-closure care, and requires the Department to specify the frequency of the burning allowed. Policies and procedures were developed and implemented beginning in 2007 through Departmental Guidance (LPR-SW-01-2007 Vegetative Waste Burning at Closed Landfills) to include a 5-day per quarter limit. The proposed regulation incorporates the 5-day per quarter limit at both active and closed permitted landfills for consistency with existing agency guidance.</p> <p>The open burning exemptions were also modified to be consistent with open burning requirements for Volatile Organic Compound (VOC) Emissions Control Areas found in regulations adopted by the State Air Pollution Control Board and to be more protective of human health and the environment.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.B.7.e.</b> It is not unusual for MSW landfills to periodically exceed their "vertical design capacity" on a temporary basis. This may not be noticed until the now required DEQ survey or other operational survey. It typically happens when the owner/operator knows the landfill will settle (operational consideration) or while waiting for a new cell to be constructed (DEQ notification). It can be mitigated when needed. It in and of itself, is not a threat to human health or the environment. By this statement it is unclear on the specific intent of DEQ. Should a permit holder within 24 hours of identifying the height</p>	<p>The Department does expect to be notified if solid waste is outside the constructed disposal unit boundary or above the vertical design capacity and the annual survey requirement will assist in that notification. The intent is that DEQ will have the ability to allow temporary storage when needed for exigent or emergency situation but does not intend for this to be allowed as part of routine operation or for settling prior to closure.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>exceedance notify DEQ of the exceedance (followed by written notification in 5 days)? Delete the terms "exigent or emergency" situations. DEQ should have the flexibility to approve in writing whether a situation is exigent or an emergency if there is no threat to human health or the environment.</p>	
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.B.21.</b> While it is believed that the reasoning behind this regulation is aimed at more accurate SWIA reporting specifically in determining 20 years of remaining capacity in Virginia (needed to demonstrate need), an annual survey and the subsequent evaluation is expensive (noted in the support documentation as \$16,000 per year) and likely to trigger enforcement actions without regard to the true impact to human health or the environment. e.g. is a one-foot exceedance the equivalent of a 5-foot exceedance; is a 2.8 to 1 slope that much different than a 3.0 to 1 slope. There is also some subjectivity in comparison of surveys over time based on methodology, vegetative cover and operations. We believe that while an annual survey is helpful, it is not necessarily needed and hence should be at the discretion of the owner/operator to be completed for their inhouse purposes and not a formal submittal to</p>	<p>The annual survey requirement is being added for multiple reasons: to determine areas of overfill or exceeding the waste boundary; to provide more accurate landfill disposal capacity information in the state to assist with the Director's Determination of Need; and to achieve more accurate reporting for the Solid Waste Information &amp; Assessment (SWIA) reporting. Compliance with this requirement and the results of the survey will be determined based on the severity level as outlined in the Compliance Inspectors Manual.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>DEQ. Prior to implementing this regulation, DEQ should provide further guidance on how they will review and handle the information</p>	
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.C.1.a.</b> The term "tipping demand" is not defined in the regulations. Is there a clearer way to state this. Is this not just a function of operations?</p>	<p>The language regarding "tipping demand" exists in the current regulation and was relocated within the subsection for clarity as part of the proposed regulation.</p> <p>The requirement to confine the working face to the smallest area practicable was not changed as part of the proposed regulation.</p> <p>The phrase "tipping demand" is used to indicate that the landfill's working face size is a function of the amount of waste being received and smallest area practicably needed to tip, spread, and compact the waste at the working face. The Department appreciates the suggestion, but has determined that the requirements established in the regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.C.1.c.</b> Storm water infiltration is not defined in the regulations. What is the metric to determine "control of stormwater infiltration"? How will DEQ assess whether or not alternate covers control stormwater infiltration in an equivalent manner to 6" of compacted soil? Because of the ambiguity and subjectivity of this term, we recommend deleting it or being more specific in its definition.</p>	<p>The lack of daily cover or improper daily cover can lead to increased infiltration or percolation of stormwater into the waste cells, which can generate additional leachate. Excess leachate can lead or contribute to increased side slope seeps and erosion, leachate releases, discharges to surface water, buildup of leachate head on the bottom liner, and slope instability. When these types of issues are occurring at a landfill, the cover type, application and frequency are just a few of many underlying factors to consider when determining what could be contributing to the issues as well as possible resolutions.</p> <p>The Department acknowledges the concern with the proposed language and has revised the text in 9VAC20-81-140.C.1.c to require daily cover and alternate daily cover at a sanitary landfill to "minimize" (rather than "control") stormwater infiltration in order to clarify the intent of the requirement. This change also requires revisions to similar language in the following sections for consistency: 9VAC20-81-140.D.1.b (CDD landfill cover) and 9VAC20-81-140.E.1.c (industrial landfill cover).</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-140.C.1.f.</b> Delete phrase "accelerate surface runoff" or replace with "promote surface runoff."</p>	<p>The phrase "accelerate surface runoff" was included in this section of the proposed regulations for consistency with the use of the phrase in other sections of the current regulations. However, the department has considered the use of the word "accelerate" versus the use of the word "promote" and agrees with this comment.</p> <p>The word "accelerate" has been replaced with the word "promote" in order to clarify the requirement. This change also</p>

		requires revision of similar language in the following sections for consistency: 9VAC20-81-140.D.1.d and 9VAC20-81-140.E.1.f.
Mike Lawless, Draper Aden Associates	<b>9VAC20-81-140.C.1.f.</b> Question on need for weekly inspections. Would suggest changing to periodic.	<p>This language exists in the current regulation, and the requirement for weekly inspections of intermediate cover at sanitary landfills was not changed as part of the proposed regulation. Weekly inspections of intermediate cover are needed in order to ensure that cover integrity is being maintained. Frequent inspections reveal cracks, erosion, uneven areas, ponding water, animal burrows, leachate seeps, exposed waste, and other issues, and are intended to prompt repair soon after occurrence to prevent problems from becoming worse. This requirement is also consistent with industry best practice.</p> <p>The Department appreciates the suggestion, but has determined that the requirements established in the regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
Mike Lawless, Draper Aden Associates	<b>9VAC20-81-140.D.1.b.</b> Storm water infiltration is not defined in the regulations. What is the metric to determine "control of stormwater infiltration"? How will DEQ assess whether or not alternate covers control stormwater infiltration in an equivalent manner to 6" of compacted soil? Because of the ambiguity and subjectivity of this term, we recommend deleting it or being more specific in its definition.	<p>The regulations do not specify an allowance for alternate progressive cover at CDD landfills. Progressive soil cover is required to be one-foot thick, compacted to reduce permeability, and maintained weekly such that the top of the lift is fully covered at the end of the work week. Compacted soil cover is also required to be applied as necessary to control fires, odors, blowing litter, and minimize stormwater infiltration.</p> <p>The lack of cover or improper cover can lead to increased infiltration or percolation of stormwater into the waste cells, which can generate additional leachate. Excess leachate can lead or contribute to increased side slope seeps and erosion, leachate releases, discharges to surface water, buildup of leachate head on the bottom liner, and slope instability. When these types of issues are occurring at a landfill, the cover type, application and frequency are just a few of many underlying factors to consider when determining what could be contributing to the issues as well as possible resolutions.</p> <p>The Department acknowledges the concern with the proposed language and has revised the text in 9VAC20-81-140.D.1.b to require progressive cover at a CDD landfill to "minimize" (rather than "control") stormwater infiltration in order to clarify the intent of the requirement. This change also requires revisions to similar language in the following sections for consistency: 9VAC20-81-140.C.1.c (sanitary landfill cover) and 9VAC20-81-140.E.1.c (industrial landfill cover).</p>
Mike Lawless, Draper Aden	<b>9VAC20-81-140.D.1.d.</b> Change "accelerate" to "promote".	The word "accelerate" (to accelerate surface runoff) is used in this section of the current regulations and was not changed as part of the proposed regulation. However, the department has considered the use of the word "accelerate" versus the use of the word "promote" and agrees with this comment. The word "accelerate" has been replaced with the word "promote" in

<p>Associa tes</p>		<p>order to clarify the requirement. This change also requires revision of similar language in the following sections for consistency: 9VAC20-81-140.C.1.f and 9VAC20-81-140.E.1.f.</p>
<p>Mike Lawles s, Draper Aden Associa tes</p>	<p><b>9VAC20-81-140.D.1.d.</b> Unclear on the need for "weekly" inspections. Would suggest changing to "periodic" inspections allowing flexibility for the Owner/Operator.</p>	<p>The requirement for weekly inspections of intermediate cover already exists in the current regulations for sanitary and industrial landfills and was added for construction/demolition/debris landfills in the proposed regulations for consistency. Weekly inspections of intermediate cover are needed at all landfills in order to ensure that cover integrity is being maintained. Frequent inspections reveal cracks, erosion, uneven areas, ponding water, animal burrows, leachate seeps, exposed waste, and other issues, and are intended to prompt repair soon after occurrence to prevent problems from becoming worse. This requirement is also consistent with industry best practice.</p> <p>The Department appreciates the suggestion, but has determined that the requirements established in the regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawles s, Draper Aden Associa tes</p>	<p><b>9VAC20-81-170.D.3-5.</b>In review of the upfront documentation to the draft regulations, no discussion was found addressing the need or purpose for the notifications and public comment period or the procedures for requesting a public meeting. This seems like an onerous burden to place on the permit holder. Notification to the locality makes some sense but not to all adjacent property owners and occupants. Public comment is directed to the technical and "regulatory" aspects of the proposal. DEQ should stand behind their decision that the documentation submitted is technically adequate and meets the requirements of the regulations. Opening it up to public participation may trigger significant</p>	<p>The regulation follows the procedures outlined in Waste Guidance Memo No. 01-2007 – Post-Closure Care Termination which has been used for processing post-closure care termination requests since 2007. The Department has determined it is important that adjacent property owners be notified of the discontinuation of monitoring activities at a site and have the opportunity to provide comment or express concern. This notification follows similar requirements outlined for the Part A (9 VAC 20-81-460.I) when a facility is first being established or when it is being expanded. The permittee is tasked with this process to foster communication and cooperation between the permittee and surrounding community.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>interest without technical merit. If DEQ believes public involvement is needed to support their decision, DEQ should be tasked with notifications, advertisements, review and response to comments, and holding a public meeting if needed. The burden should not be placed on the permit holder.</p>	
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-200.C.5.a-d.</b> Change the word "prevent" to "discourage".</p>	<p>There are 2 uses of the word "prevent" under this new section of the proposed regulations. The Department agrees with this comment as it applies to section 200.C.5.b (to prevent tampering of probes), and the text has been revised to replace the word "prevent" with "discourage" in order to clarify the requirement.</p> <p>The Department does not agree with the comment as it applies to section 200.C.5.c (to prevent venting of probes to the atmosphere) as ambient/external air should not be allowed to enter the probe prior to or during gas sampling to avoid inaccurate results during methane gas monitoring of the perimeter gas monitoring network.</p> <p>No change was made to the regulation in response to this comment as it applies to section 200.C.5.c.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-200.2.a-d.</b>The upfront documents to the draft regulations (Pages 1706 and 1707) indicate that the purpose of the notification of adjacent property owners and occupants is to incentivize landfill owners to maintain compliance because the cost of this notification and requirement to offer monitoring inside nearby offsite structures would impact them. However, this section goes on to state "DEQ does not expect the costs of additional offsite monitoring to be significant because the majority of landfills do not have occupied structures within 500 feet</p>	<p>The notification to nearby property owners of exceedances to the lower explosive limit for methane is being included in the regulation to protect public safety. Owners and occupants of properties in close proximity need to be aware of the existence of the high levels of methane gas at the perimeter of the landfill which may have the potential to migrate subsurface and collect in offsite structures. The goal of notification and monitoring is to keep those on neighboring properties informed concerning the potential for the subsurface migration of methane and safety risks related to explosive gases.</p> <p>The Regulatory Advisory Panel achieved consensus on adding these requirements to the regulation.</p> <p>The Department has determined that the requirements established in the proposed regulations are sufficient to protect the health, safety and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>

	<p>of the perimeter gas monitoring network and any additional monitoring could be conducted in conjunction with the current monitoring that already occurs at the facility." These two statements do not correlate. Notification to adjacent property owners for a small exceedance could result in stirring up concerns that are unfounded. 500' is a significant distance and could involve multiple parties. Since DEQ does not justify this based on protection of human health or the environment but instead as an "incentive" to maintain compliance, we would suggest that 2.d be dropped.</p>	
<p>Mike Lawles, Draper Aden Associates</p>	<p><b>9VAC20-81-200.E.1.</b> Odor management. Suggest: "When a facility receives an odor complaint <i>in writing</i>, either directly....</p>	<p>The Department has determined that odor complaints, whether received verbally or in writing, need to be documented, promptly investigated, and remediated as appropriate.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawles, Draper Aden Associates</p>	<p><b>9VAC20-81-200.E.2.</b> "Citizens beyond the facility boundaries" is a pretty broad category. It is understood that citizens not immediately adjacent to the site can be impacted. But would suggest that this state:" ...to address odors that have impacted citizens beyond the facility boundaries, with said citizens providing in writing proof of such impact."</p>	<p>This language exists in the current regulation, and the requirement was not changed as part of the proposed regulation. The sentence containing the phrase referred to by the commenter was relocated within the subsection for clarity as part of the proposed regulation.</p> <p>The Department appreciates the suggestion, but has determined that the requirements established in the regulations are sufficient to protect the health, safety, and welfare of the public.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawles, Draper Aden</p>	<p><b>9VAC20-81-200.F.3.</b> Delete the last sentence. Factory calibration in accordance with the manufacture has never been required for gas</p>	<p>While the Department agrees that field calibration is necessary to demonstrate proper operation of landfill gas monitoring equipment, the Department's understanding is that factory calibration of equipment in accordance with the manufacturer's recommendations is an industry standard practice and also necessary in order to ensure that the equipment is operating as</p>

<p>Associates</p>	<p>migration sampling. Field calibration is sufficient to demonstrate proper operation of the meter.</p>	<p>designed and intended to obtain accurate landfill gas readings. DEQ's position on this subject has been documented in the Department's 2017 Guidance Document LPR-SW-SI-13 (Submission Instruction 13 – Landfill Gas Management, Remediation, and Odor Plans for Solid Waste Disposal Facilities), which states "Records of factory calibration, performed at a frequency as indicated by the manufacturer, should also be maintained with gas monitoring records."</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-250.6.a.</b> [Establishment of groundwater protection standards.] The proposed changes add a new Column C to Table 3.1, which outlines the constituents for which groundwater monitoring must be conducted. Column represents constituents that do not yet have a regulatory standard. Column C includes per- and polyfluoroalkyl substances (PFAS and related constituents). There is no need for this change, and it is likely to create confusion. DEQ has the authority to require sampling where there is cause for a sites specific evaluation, and also where there is a need to gather data to determine whether to establish a standard. Moreover, if a standard is promulgated in the future, sampling is automatically required. But adding a monitoring requirement now, when there is no standard and there are other processes underway to identify sources, presence and need for a standard, is premature. Including this provision now is likely to create</p>	<p>The proposed modification to the groundwater sampling list is a result of requirements within Code of Virginia § <a href="#">32.1-169</a> (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL's (HB 1257 and HB 586) for a certain list of constituents.</p> <p>The fact that the Virginia Department of Health may choose to set MCLs for additional PFAS constituents, not specifically named in the House Bills referenced above, based on the results of a surface water and groundwater sampling study completed within the Commonwealth, is not any limitation to adding a VSWMR requirement to begin sampling for the constituents already identified (by name) within the existing passed legislation. The proposed VSWMR regulation will require the sampling for (and analysis of) the list of constituents identified in the proposed regulation as soon as the Virginia Department of Health completes the MCL promulgation process now required by the Code of Virginia. The proposed regulation is clear that until these standards are promulgated by the Virginia Department of Health, no sampling or analysis is required. To further demonstrate that intent, an additional footnote will be added to the sampling constituent table addressing that.</p> <p>The assertion that the Department is responsible for evaluating the need for standards is erroneous. By Statute, this responsibility has already been placed on the Virginia Department of Health, and such standards, once promulgated, will apply across the Commonwealth. The Virginia Department of Environmental Quality does not have regulatory authority to promulgate its own MCLs, nor does it have authority to ignore such Commonwealth-wide standards once promulgated by the Virginia Department of Health.</p> <p>The Department disagrees with the comment that the Agency Background document is unclear on why it is necessary to include the additional constituents within a regulated landfill's monitoring plan. The added Column C groundwater constituents are found in common commercial and household</p>

	<p>confusion because it is unclear what action or implication results from this sampling data, given that there is no applicable regulatory standard or requirement associated with it.</p>	<p>products which are discarded as municipal solid waste and therefore can become components of landfill leachate. The recognition of, and response to any impacts on human health and the environmental are determined by the sampling and analysis for these constituents as part of a regulated landfill's groundwater monitoring program. The sole intent of the groundwater monitoring program is to determine whether leachate is being released from the landfill.</p> <p>For further clarification, the Department will add a footnote to Table 3.1 stating: "<i>The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL's</i>".</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-250.2.(4).</b> <u>"Data from the background wells during each subsequent sampling event shall be added to the previously calculated background data for the recalculation of site background once every four years, unless approval for a longer timeframe is obtained from the department, to maintain the most accurate representation of background groundwater quality for statistical purposes required under subdivision A 4 h of this section."</u> Clarification needed.</p>	<p>The amended VSWMR language increases the number of independent background sampling events required for the calculation of site background to be consistent with EPA's 2009 Unified Statistical guidance. Eight samples will now be required instead of the four currently required. For new landfills or new expansion cells at existing landfills, such data must be collected before the initial groundwater sampling event is undertaken to maintain consistency with EPA's current language under 40 CFR 258.54.(b). The specific timeframe within which to collect this data will be based on site specific conditions and set by the Regional Office and/or within the facility Solid Waste Permit. It would be inappropriate for the regulatory text to mandate a specific timeframe that all facilities would have to meet based on the highly variable geology of the Commonwealth.</p> <p>All site background calculations must be submitted to the Department for review and approval prior to use in any statistical determinations. Because landfills are all conducting groundwater sampling on their site specific timeframes, it best that a facility has the flexibility to submit any data for review based on their own site specific timing constraints.</p> <p>While the proposed VSWMR text change modified the number of sampling events required to establish site background, it did not elaborate on what data may be used in future updates to the calculated background. Determining what data is appropriate for background calculation is best determined through contact with the Department and adherence to the technical criteria discussed within EPA's 2009 Unified Statistical Guidance document.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless,</p>	<p><b>9VAC20-81-250.2.b.(1).</b> "A statistically significant increase over</p>	<p>Typo noted by the commenter fixed as requested. While the commenter correctly notes that no limits (i.e., Virginia Department of Health promulgated MCLs) currently exist for the</p>

<p>Draper Aden Associates</p>	<p>background as determined by a method meeting the requirements of subsection D of this section, for one or more of the constituents listed in Table 3.1 <del>Column</del> <u>Columns A and C</u> at any of the monitoring wells at the disposal unit boundary during any detection monitoring sampling event, the owner or operator shall:  ...” There are no limits set for Column C. What would a SSI look like?</p>	<p>proposed constituents in Column C, this is irrelevant since the proposed regulation does not require sampling prior to the promulgation of Virginia Department of Health MCL's.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-250.3.a.</b> The proposed changes add a new Column C to Table 3.1, which outlines the constituents for which groundwater monitoring must be conducted. Column represents constituents that do not yet have a regulatory standard. Column C includes per- and polyfluoroalkyl substances (PFAS and related constituents). There is no need for this change, and it is likely to create confusion. DEQ has the authority to require sampling where there is cause for a sitespecific evaluation, and also where there is a need to gather data to determine whether to establish a standard. Moreover, if a standard is promulgated in the future, sampling is automatically required. But adding a monitoring requirement now, when there is no standard and there are other processes underway to identify sources,</p>	<p>The proposed modification to the groundwater sampling list is a result of requirements within Code of Virginia § <a href="#">32.1-169</a> (adding subsection B), which requires the Board of Health to adopt regulations establishing MCLs for PFAS, chromium (VI), and 1,4-dioxane. These requirements are effective January 1, 2022. The proposed VSWMR regulatory change has been made consistent with the statutory requirement that the Virginia Department of Health set MCL's (HB 1257 and HB 586) for a certain list of constituents.</p> <p>The fact that the Virginia Department of Health may choose to set MCLs for additional PFAS constituents, not specifically named in the House Bills referenced above, based on the results of a surface water and groundwater sampling study completed within the Commonwealth, is not any limitation to adding a VSWMR requirement to begin sampling for the constituents already identified (by name) within the existing passed legislation. The proposed VSWMR regulation will require the sampling for (and analysis of) the list of constituents identified in the proposed regulation as soon as the Virginia Department of Health completes the MCL promulgation process now required by the Code of Virginia. The proposed regulation is clear that until these standards are promulgated by the Virginia Department of Health, no sampling or analysis is required. To further demonstrate that intent, an additional footnote will be added to the sampling constituent table addressing that.</p> <p>The assertion that the Department is responsible for evaluating the need for standards is erroneous. By Statute, this responsibility has already been placed on the Virginia Department of Health, and such standards, once promulgated, will apply across the Commonwealth. The Virginia Department of Environmental Quality does not have regulatory authority to promulgate its own MCLs, nor does it have authority to ignore</p>

	<p>presence and need for a standard, is premature. Including this provision now is likely to create confusion because it is unclear what action or implication results from this sampling data, given that there is no applicable regulatory standard or requirement associated with it.</p>	<p>such Commonwealth-wide standards once promulgated by the Virginia Department of Health.</p> <p>The Department disagrees with the comment that the Agency Background document is unclear on why it is necessary to include the additional constituents within a regulated landfill's monitoring plan. The added Column C groundwater constituents are found in common commercial and household products which are discarded as municipal solid waste and therefore can become components of landfill leachate. The recognition of, and response to any impacts on human health and the environment are determined by the sampling and analysis for these constituents as part of a regulated landfill's groundwater monitoring program. The sole intent of the groundwater monitoring program is to determine whether leachate is being released from the landfill.</p> <p>For further clarification, the Department will add a footnote to Table 3.1 stating: "<i>The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL's</i>".</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-450. (Part A Application) 1.</b> In the last sentence, add "intentionally" before submitting.</p>	<p>The Department appreciates the comment but has determined inserting "intentionally" is duplicative since the sentence already states this is for knowing violations.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-450. (Part B Application) 1.</b> In the last sentence, add "intentionally" before submitting.</p>	<p>The Department appreciates the comment but has determined inserting "intentionally" is duplicative since the sentence already states this is for knowing violations.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-485.A.1.d(1)</b> "Daily operations including a discussion of ..." Typically "schedules for waste delivery vehicle flow and enforcement of traffic flow plans," are out of the hands of the permit holder. Recommend deletion of these two references.</p>	<p>The proposed regulation included updates to the requirements of the landfill operations plan for consistency with operations plan requirements for other solid waste management facilities (e.g. transfer stations, materials recovery facilities, incinerators, and waste-to-energy facilities). Other solid waste management facilities have already been providing this information in their operations manuals. The Department understands that landfills do have control over aspects of schedules for waste delivery vehicle flow and enforcement of traffic flow plans. In regards to "schedules for waste delivery vehicle flow," the Department anticipates that landfills would describe how waste delivery vehicles enter and exit the site, and navigate to the scales, landfill working face, and any other areas. While the exact arrival times of waste delivery vehicles may be unknown, the landfill may have special hours of operation that are reserved for certain types of waste delivery vehicles (e.g. commercial v. residential). Methods of enforcing traffic flow plans may include</p>

		<p>traffic control signs, designated lanes, traffic lights, spotters, radio control, or other strategies.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-485.A.5</b> (Emergency Contingency Plan), new subdivision f. Recommend changing f. to <i>"An attached fire control plan for active landfills that generally includes as applicable:"</i></p>	<p>The Department has determined that all information under subdivision f is applicable to all active landfills and required to be addressed in the fire control plans except for item 5 (isolation or shutdown of gas remediation systems) which already includes the phrase "as applicable."</p> <p>The Regulatory Advisory Panel also achieved consensus on adding these requirements to fire control plans.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-485.B.1.b</b> (Operations Plan), subdivision b. Typically "schedules for waste delivery vehicle flow and enforcement of traffic flow plans," are out of the hands of the permit holder. Recommend deletion of these two references.</p>	<p>The requirement for solid waste management facilities (e.g. transfer stations, materials recovery facilities, incinerators, and waste-to-energy facilities) to include schedules for waste delivery vehicle flow and methods of enforcement of traffic flow plans for the waste delivery vehicles in operations plans already exists in the current regulation under 9VAC20-81-340 and was relocated and consolidated with other operations manual requirements under another section (9VAC20-81-485) as part of the proposed regulation.</p> <p>In regards to "schedules for waste delivery vehicle flow," facilities describe how waste delivery vehicles enter and exit the site, and navigate to the scales, tipping area, and any other areas. While the exact arrival times of waste delivery vehicles may be unknown, the facility may have special hours of operation that are reserved for certain types of waste delivery vehicles (e.g. commercial v. residential). Methods of enforcing traffic flow plans may include traffic control signs, designated lanes, traffic lights, spotters, radio control, or other strategies.</p> <p>No change has been made to the regulation in response to this comment.</p>
<p>Mike Lawless, Draper Aden Associates</p>	<p><b>9VAC20-81-485.</b> (Operations Plan), new subdivision g (1). What would a method to "determine usefulness of the recovered material" be? Testing frequencies?</p>	<p>This requirement already exists in the current regulations under 9VAC20-81-340.D.3.b and was not revised as part of the proposed regulation. The language was relocated to another section (9VAC20-81-485) as part of the proposed regulation for consolidation with other Operations Manual requirements. Materials recovery facilities are already required to include a description of methods to determine the usefulness of the recovered material and frequency of testing in their operating plans. Methods and frequency are site-specific and dependent upon the type of material being recovered by the facility. Testing may not be required for all material types.</p> <p>No change has been made to the regulation in response to this comment.</p>

**Detail of Changes Made Since the Previous Stage**

*List all changes made to the text since the previous stage was published in the Virginia Register of Regulations and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.*

Current chapter-section number	New chapter-section number, if applicable	New requirement from previous stage	Updated new requirement since previous stage	Change, intent, rationale, and likely impact of updated requirements
10			Added definition of Certified Compostable products	Definition has been added for “Certified compostable products.” Definition per the US Compost Council’s Model Compost Rule. This definition is being added to clarify a type of feedstock for composting. No impact is expected as a result of this change.
10		Defines the term compost	Revises the definition of compost to match that of the American Association of Plant and Food Control Officials definitions adopted in 2018.	This update ensures that these regulations are more consistent with recommendations of the US Compost Council. No impact is expected as a result of this change.
10			Added “correction of overfills” to the list of activities which do not constitute landfill mining.	This further clarifies activities that will not constitute landfill mining and require additional regulatory oversight. No impact is expected as a result of this change.
10			Added “...to facilitate correction of overfills, installation of landfill gas, leachate...” to definition of “Landfill Mining”	“...to facilitate correction of overfills, installation of landfill gas, leachate...” has been added to the definition of “Landfill Mining.” This change is being made in response to a comment made during the proposed regulatory

				stage. The change is being made to clarify the definition. No impact is expected as a result of this change.
98.B.4			Requires appropriate containers to be leak-resistant	The criteria for appropriate containers has been updated to require containers to be "leak-resistant" instead of "leak-proof." This change was necessary to make the requirement more practicable and consistent with the current, accepted waste industry practice. No impact is expected as a result of this change.
120.D.2			The regulatory text has been updated to for consistency with the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830)	The verbiage was updated to incorporate exceptions consistent with the Chesapeake Bay Preservation Area Designation and Management Regulations. No impact is expected as a result of this change.
130.H			The relevant regulatory text has been amended to include industry standards.	The relevant regulatory text has been amended to include industry standards. The change has been made in response to a comment received during the proposed regulatory stage. The change is being made to clarify industry standards. No impact is expected as a result of the change.
130.I.4			Requires consistency with the Erosion and Sediment Control Regulations (9VAC25-840).	The text has been revised to remove the reference to "the minimum standards and specifications" as the Department did not intend to reference a specific section of the Erosion and Sediment Control Regulations or to reference the Erosion and Sediment

				<p>Control Handbook. These measures are not part of the solid waste permit but are addressed through another agency program. This change is necessary to clarify that the intent of the language is to highlight that the Erosion and Sediment Control Regulations may be applicable to construction of new landfill cells. No impact is expected as a result of the change.</p>
140.B.6.b			Prohibits methane gas exceedances	<p>The text has been revised to remove the word “boundary” in order to clarify that the limits for methane gas concentrations at landfills are applicable to the facility’s gas monitoring network. The limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are considered points of compliance for lateral migration of landfill gas. This change is necessary to clarify the original intent of the requirement and for consistency with the existing interpretation by both the agency and the regulated community. No impact is expected as a result of this change.</p>

140.B.19			Specifies the option for the facility to request a temporary extension of operating hours to respond to an emergency or other event.	The text has been revised to add punctuation (commas) around the phrase “if necessary” to clarify that a facility may or may not need to request a temporary extension of operating hours to respond to an emergency or unusual event. The need will be based on site-specific circumstances and the facility’s existing permit conditions. This change is necessary in order to properly interpret the requirement. No impact is expected as a result of this change.
140.B.20		The text has been revised to add punctuation (commas) around the phrase “if necessary”	Specifies the option for the facility to request a temporary increase in daily disposal limit or waste storage limits to respond to an emergency or other event.	The text has been revised to add punctuation (commas) around the phrase “if necessary” to clarify that a facility may or may not need to request a temporary increase in daily disposal limit or waste storage limits to respond to an emergency or unusual event. The need will be based on site-specific circumstances and the facility’s existing permit conditions. This change is necessary in order to properly interpret the requirement. No impact is expected as a result of this change.
140.D.1.d 140.C.1.f			Requires that intermediate cover at a sanitary landfill promote surface runoff.	The text has been revised to specify that intermediate cover shall be graded to prevent ponding and “promote” (rather than “accelerate”) surface runoff in order to clarify that the intent of the original requirement is

140.E.1.f			Requires that intermediate cover at an industrial landfill promote surface runoff.	<p>to minimize infiltration of water into solid waste cells. This change is necessary for consistency with revisions to similar language in 140.C.1.f.. No impact is expected as a result of this change.</p> <p>The text has been revised to specify that intermediate cover shall be graded to prevent ponding and “promote” (rather than “accelerate”) surface runoff in order to clarify that the intent of the original requirement is to minimize infiltration of water into solid waste cells. This change is necessary for consistency with revisions to similar language in 140.C.1.f. No impact is expected as a result of this change.</p>
140.E.1.b.		The reference to fly ash as an example of non-compactable waste has been removed from the regulation in order to correct the accuracy of the text.	Specifies that a lift height is not required for materials that are not compactable.	The reference to fly ash as an example of non-compactable waste has been removed from the regulation in order to correct the accuracy of the text, since fly ash is a compactable waste type. This change is not anticipated to affect industrial landfills that accept fly ash for disposal as the requirement for lift height size remains site-specific based on the volume and nature of the waste received. No impact is expected as a result of this change.
200.B.1.b			Prohibits methane gas exceedances	The text has been revised to remove the

			<p>within the facility gas monitoring network.</p>	<p>word “boundary” in order to clarify that the limits for methane gas concentrations at landfills are applicable to the facility’s gas monitoring network. The limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are considered points of compliance for lateral migration of landfill gas. This change is necessary to clarify the original intent of the requirement and for consistency with the existing interpretation by both the agency and the regulated community. No impact is expected as a result of this change.</p>
<p>200.D.1</p>			<p>Specifies the facility’s required response to methane gas exceedances within the facility gas monitoring network.</p>	<p>The text has been revised to remove the word “boundary” to clarify that the limits for methane gas concentrations at landfills are applicable to the facility’s gas monitoring network. The limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are</p>

				considered points of compliance for lateral migration of landfill gas. This change is necessary to clarify the original intent of the requirement and for consistency with the existing interpretation by both the agency and the regulated community. No impact is expected as a result of this change.
200.D.2			Specifies the facility's required response to methane gas exceedances within the facility gas monitoring network.	The text has been revised to remove the word "boundary" to clarify that the limits for methane gas concentrations at landfills are applicable to the facility's gas monitoring network. The limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are considered points of compliance for lateral migration of landfill gas. This change is necessary to clarify the original intent of the requirement and for consistency with the existing interpretation by both the agency and the regulated community. No impact is expected as a result of this change.
200.D.2.d			Requires written notification and an offer to provide methane monitoring to property owners	Two occurrences of the word "adjacent" have been removed from the text to clarify that facility's notification and

			and occupants of all occupied structures within 500 feet of a landfill gas monitoring point that has exceeded the compliance level (lower explosive limit) for methane.	offer to provide monitoring is required for all occupied structures within 500 feet of a monitoring point with a methane compliance level exceedance, not just those occupied structures on property adjacent or contiguous to the facility. The change is necessary to more clearly specify which property owners and occupants must be notified of methane exceedances in order to protect public safety and human health. For some facilities in urban areas, there may be multiple properties with occupied structures within 500 feet of a monitoring point, some of which may not necessarily be adjacent or contiguous to the facility property, but still require notification and the offer to monitor. No impact is expected as a result of this change.
250.A.4.d.			Revisions to text made to be consistent with EPA's 2009 Unified Statistical Guidance	A sentence has been added to the end of the section stating, "After the initial calculation of site background, background values shall be updated in a manner consistent with EPA's 2009 Unified Statistical Guidance (as updated), the site's geologic and hydrologic characteristics, or as requested by the Department."
250.A.4.f			The relevant regulatory text has been revised to remove "dedicated."	The relevant regulatory text has been revised to remove "dedicated." The change is being proposed in response to a comment received

				during the proposed regulatory stage. The change has been made to eliminate any unintended confusion related to the use of the term " <i>dedicated</i> ." No impact is expected as a result of this change.
250.B.2.a.(1).(b).			The regulation is being revised to require 8 instead of 4 independent groundwater samples from each well. This change is being made to be consistent with EPA's 2009 statistical guidance. Additionally, language has been added to allow the facility to sample wells prior to the receipt of waste which provides more flexibility to the operational requirement for the facility.	The number of required samples has been changed from four to eight, prior to or within the first quarterly period of sampling. This change is being made to be consistent with EPA's statistical guidance.
250.B.2.a.(4).			Regulatory language has been removed to be consistent with EPA's 2009 Statistical Guidance	The following regulatory language has been removed from the regulation, "Data from the background wells during each subsequent sampling event shall be added to the previously calculated background data for the recalculation of site background once every four years, unless approval for a longer timeframe is obtained from the department, to maintain the most accurate representation of background groundwater quality for statistical purposes required under

				<p>subdivision A.4.h. of this section.”</p> <p>This requirement was previously included in 250.B.2.a.(2) but has been included in a separate subdivision. Background well sampling information is to be used to re-establish background values to maintain an accurate representation of groundwater quality. This change is consistent with EPA’s 2009 statistical guidance.</p>
250.E.2.g			The term “identified is being replaced with “detected”	<p>The term “identified is being replaced with “detected in the following relevant regulatory text: “A table listing the constituents identified during the year’s sampling events, their concentrations at the respective monitoring well, and if applicable, the related groundwater protection standard in effect during the sampling event.” This change is being made in response to a comment received during the proposed regulatory stage. The change is being made to clarify the intent of the requirement. No impact is expected as a result of this change.</p>
Table 3.1 of the Groundwater Monitoring Constituents			Addition of footnote to Column C of Groundwater	<p>The following footnote is being added to Column C, Table 3.1 of the Groundwater</p>

			Monitoring Constituents	Monitoring Constituents: <i>"The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL's"</i> . The change has been made in response to a comment received during the proposed regulatory stage. The change has been made to clarify when PFAS constituent sampling will be required, after VDH establishes MCLs. No impact is expected as a result of this change.
310.A.3.c.(4)		Clarifies materials acceptable for composting.	This acknowledges certified compostable products as acceptable for composting.	This update clarifies materials acceptable for composting without limiting compostable materials that have not gone through official certification process. No impact is expected as a result of this change.
320.G.3			Additional clarification has been added for distance based on compost feedstock	The U.S. Department of Transportation, Federal Aviation Administration (FAA), in its Advisory Circular, "Hazardous Wildlife Attractants On or Near Airports" (#150/5200-33, 1997) notes that yard waste is "generally not considered a wildlife attractant" and that the compost should never include food waste. Larger separation distances are required for activities which are wildlife attractants such as composting of Category I-IV that include any type of food waste. No impact is

				expected as a result of this change.
340.B.2			Specifies the option for the facility to request a temporary extension of operating hours to respond to an emergency or other event.	The text has been revised to add punctuation (commas) around the phrase “if necessary” to clarify that a facility may or may not need to request a temporary extension of operating hours to respond to an emergency or unusual event. The need will be based on site-specific circumstances and the facility’s existing permit-by-rule. This change is necessary in order to properly interpret the requirement and for consistency with revisions to similar language in 140.B.19.
340.B.3		The text has been revised to add punctuation (commas) around the phrase “if necessary”	Specifies the option for the facility to request a temporary increase in daily processing rate or waste storage limits to respond to an emergency or other event.	The text has been revised to add punctuation (commas) around the phrase “if necessary” to clarify that a facility may or may not need to request a temporary increase in daily processing rate or waste storage limits to respond to an emergency or unusual event. The need will be based on site-specific circumstances and the facility’s existing permit-by-rule. This change is necessary in order to properly interpret the requirement and for consistency with revisions to similar language in 140.B.20.
397.B.2.e			“Yard Waste has been replaced by “Category 1 Feedstocks”	This change was made to be consistent with earlier changes in 9VAC20-81-397.B.2.
530.C.3.e			Specifies the facility’s required response to	The text has been revised to remove the word “boundary” to

			methane gas exceedances within the facility gas monitoring network.	clarify that the limits for methane gas concentrations at landfills are applicable to the facility's gas monitoring network. The limits of the gas monitoring network and the limits of the facility boundary may not necessarily be the same. The gas monitoring network is to be designed to detect gas migrating beyond the landfill facility boundary, and the monitored locations are considered points of compliance for lateral migration of landfill gas. This change is necessary to clarify the original intent of the requirement and for consistency with the existing interpretation by both the agency and the regulated community. No impact is expected as a result of this change.
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**Detail of All Changes Proposed in this Regulatory Action**

*List all changes proposed in this action and the rationale for the changes. For example, describe the intent of the language and the expected impact. Describe the difference between existing requirement(s) and/or agency practice(s) and what is being proposed in this regulatory change. Explain the new requirements and what they mean rather than merely quoting the text of the regulation. \* Put an asterisk next to any substantive changes.*

**Table 1: Changes to Existing VAC Chapter(s)**

Current chapter-section number	New chapter-section number, if applicable	Current requirements in VAC	Change, intent, rationale, and likely impact of new requirements
10		Definitions	Additional terms are being defined in the regulation. The term "speculatively accumulated material" is being removed from the regulation and replaced with the

			<p>term “accumulated speculatively” for consistency with existing language in the regulation. Additional language is being added to the term “benchmark” to provide examples of acceptable coordinate systems for benchmark location data. The term “captive waste management facility” is being defined in the regulation to improve the clarity and readability of the regulation. The term “certified compostable products” is being defined in the regulation to clarify a type of feedstock for composting. The term “compost” is being revised for consistency with the definition adopted by the American Association of Plant and Food Control Officials in 2018. The term “home use” is being removed from the regulation since it is no longer needed due to revisions that have been made to language concerning composting activities. The term “institutional solid waste” has been added as an alternate term to “institutional waste” for consistency with how the term is used in the regulation. Revisions have been made to the definition of the term “landfill mining” to clarify what constitutes landfill mining, and what does not. These changes are consistent with the requirements found in Section 385 of the regulation. The definition of the term “Site” is being revised to include a reference to the term “infrastructure”. The term “washout” has been removed from the regulation since the term is not used in the regulation. Other minor edits and clarifications have been made to definitions to improve clarity of the regulation.</p>
25		Purpose of chapter	Minor editorial corrections have been made.
35 B.		Applicability of chapter	Revisions are being proposed to this section to eliminate information that is no longer relevant. The closure dates of facilities established by 10.1-1413.2 of the Code of Virginia have passed and all facilities required to comply have ceased to accept waste and have either closed or are in the process of completing closure. This section has been revised to continue to reference this category of facility as called out in Section 10.1-1408.1 N of the Code of Virginia and

			reiterate the requirement for closure and post-closure care.
40 B.		Prohibitions	Revisions have been made to clarify that the regulations prohibit treatment, storage, open burning, disposal, and other management of waste unless in accordance with the requirements of this chapter. Some activities meet the requirements of conditional exemptions under 9VAC20-81-95.
90 A.		Relationship with the Virginia Hazardous Waste Management Regulations	A citation has been revised in response to EPA's Hazardous Waste Generator Improvements Rule changing the term "conditionally exempt small quantity generator" to "very small quantity generator." 40 CFR 262.14 now covers the conditions for exemption for a very small quantity generator.
95 C 7 c.		Identification of solid waste-exemption for soil amendment	The regulation is being amended to clarify that soil amendments, if they meet the applicable requirements of the Virginia Department of Agriculture and Consumer Services, and do not create an open dump, hazard or public nuisance, are exempt from this regulation.
95 D 4.		Identification of solid waste-conditionally exempt activities- composting	This change provides additional exemptions from this chapter relating to composting activities onsite at the farm of generation provided no open dump, hazard or public nuisance are created. This change also clarifies existing conditional exemptions from this chapter relating to composting activities which are also subject to additional requirements under 9VAC20-81-397.
95 D 10.		Conditionally exempt activities- management of solid waste in appropriate containers	This change clarifies that the exemption applies to solid waste in appropriate containers at convenience centers in addition to solid waste in appropriate containers at the site of generation. Convenience centers that manage waste in appropriate containers are exempt from certain requirements found in this regulation. This change is consistent with current regulatory guidance. This subdivision has also been revised to recognize that waste in appropriate containers must be properly managed or disposed once the applicable storage time limits are reached. An additional requirement to quality for this exemption is being added. The waste is required to be managed in a manner that prevents discharges of leachate and wastewaters.

			The discharge of leachate or wastewater would potentially impact human health and the environment.
95 D 11.		Conditionally exempt activities- clean fill materials	Additional details have been added to clarify the materials that qualify for this exemption.
95 D 15 b.		Conditionally exempt activities- open burning for training and instruction of firefighters	This change clarifies that certain open burning activities in VOC Emissions Control Areas have additional requirements under the regulations of the State Air Pollution Control Board (9VAC5-130-30 & 9VAC5-130-40).
95 D 15 e and 95 D 15 f.		Conditionally exempt activities- open burning of household waste and vegetative waste	This change is being made in response to the Secretary of Natural and Historic Resources' report to the Governor in response to Executive Order 6. The report recommended that the regulations be revised to eliminate or significantly reduce the open burning of household solid waste. Combustion of materials commonly found in household waste is well documented to cause release of carcinogenic compounds, and the smoke and odors from the burning of household waste may be a nuisance to adjacent property owners. This change removes the exemption for open burning of household solid waste. The revised exemption for open burning on private property is only for vegetative waste, clean wood and clean paper products when no scheduled collection service is available at an adjacent road. This change is more protective of human health and the environment.
95 D 15 g.	95 D 15 f.	Conditionally exempt activities- open burning of clean wood waste and debris waste	This change limits burning in VOC Emissions Control Areas to be consistent with the regulations of the State Air Pollution Control Board (9VAC5-130-40.A.8). Certain open burning activities shall not occur in VOC Emissions Control Areas during times of the year when open burning is prohibited.
	95 D 15 g.	Conditionally exempt activities- open burning for destruction of debris waste from clean-up operations during state of emergency	Open burning for the destruction of debris waste from clean-up operations related to a Governor's declaration of a state of emergency was previously exempt under section 410. This change moves the exemption language to section 95 for inclusion with the listing of other conditionally exempt open burning activities. This exemption allows actions to occur without having to wait to receive an emergency permit for this activity.

95 D 16.		Conditionally exempt activities- open burning of vegetative waste at closed landfills not yet released from post-closure care	Additional clarifications have been added regarding exempt open burning activities at closed landfills for consistency with conditions for open burning activities at active landfills under 9VAC20-81-140.A. This change limits burning at closed landfills not yet released from post-closure care which are in VOC Emissions Control Areas to be consistent with the regulations of the State Air Pollution Control Board. Open burning of solid waste shall not occur in VOC Emissions Control Areas during times of the year when open burning is prohibited. Language has also been added to clarify the frequency of burning of vegetative waste that is allowed at a closed landfill not yet released from post-closure care in accordance with § 10.1-1410.3 of the Code of Virginia. This change is consistent with existing agency guidance.
	95 D 19.	Conditionally exempt activities- composting associated with a public/private event or festival	This exemption promotes composting as an alternative to landfilling waste by adding an exemption for additional composting activities under certain criteria.
	95 D 20.	Conditionally exempt activities- storage of nonhazardous wastes from emergency clean-up	This exemption is applicable to waste generated from emergency clean-ups. This language addresses the temporary storage of the waste, and the waste is still required to be properly managed, treated, or disposed. This requirement is similar to the requirements for the management of waste at convenience centers. This change is also consistent with existing agency guidance.
95 F 7.	95 F 8.	Exempt solid waste- scrap metal and mixtures of certain materials when reclaimed or temporarily stored for reclamation	This language clarifies that scrap metal for recycling may be exempt from this chapter if certain requirements are met. Previously the regulation did not specifically list scrap metal that had been separated for recycling as being exempt from this requirement but referred to scrap metal as part of a mixture. This change should avoid confusion concerning the requirements for scrap metal that is reclaimed or temporarily stored prior to reclamation.
	98.	Appropriate containers	A new section is proposed to be added to the regulation to assist the regulated community with understanding the requirements of appropriate containers for waste management. Standards for

			appropriate containers have previously been discussed in agency guidance. Discussing these requirements in a new section eliminates the need for appropriate containers to be discussed repeatedly throughout the regulation. A new section is proposed to discuss appropriate containers instead of adding a definition of appropriate containers since the term's meaning is dependent on different situations. Appropriate containers are to be "leak-resistant"
100 E 1.		Control program for unauthorized waste	Minor editorial clarification to replace "operating record" with "facility's operations manual" for consistency with the wording in section 485. Language has also been revised to clarify and eliminate confusion regarding which types of landfills are subject to the additional requirements for unauthorized waste control (i.e. random load inspections) under subdivision 5 of this subsection. Previously, this text referred to sanitary landfills, but subdivision 5 of this subsection referred to all landfills other than captive industrial landfills. All landfills, excluding captive industrial landfills are subject to the additional requirements for unauthorized waste control.
100 E 5 b.		Control program for unauthorized waste-inspection requirement	The revisions to this language clarify that the existing 10% inspection requirement applies to incoming loads from each jurisdiction outside of Virginia with laws that allow disposal or incineration of wastes that Virginia prohibits.
100 E 5 d.		Control program for unauthorized waste- training of landfill personnel	The regulation has been revised to clarify that staff should receive annual training on unauthorized wastes. This is needed to maintain facility staff that are able to comply with requirements of the regulation and the facility permit. This change is consistent with industry best practice as the majority of active landfills are already conducting this training annually.
100 E 5 e.		Control program for unauthorized waste-notification to department of unauthorized waste at landfill	Detailed requirements concerning the required notification are being moved to section 9VAC20-81-530.C.3 (recording and reporting required of a permittee). The general requirement to notify the department remains in this subdivision, and refers the reader to the requirements found in 9VAC20-81-

			530.C.3. (recording and reporting of a permittee).
120 A. 120 B. 120 C. 120 D. 120 E. 120 I.	120 A 120 B 120 C 120 D 120 E 120 F 120 J	Landfill siting requirements	Changes are being made to the landfill siting criteria in response to the Secretary of Natural and Historic Resources' report to the Governor in response to Executive Order 6 (2018). The report recommended that the regulations be revised to update provisions related to setbacks and siting of solid waste facilities, as well as solid waste facility leachate pollution. Terminology used in the regulation pertaining to the siting setbacks is being updated to use the term "waste management boundary" instead of the word "landfill" or the phrase "disposal unit or leachate storage unit" to make the regulation easier to understand. The "waste management boundary" includes the disposal unit and the leachate storage areas. This change will eliminate confusion by clarifying that the siting requirements for landfills apply to the locations where waste and leachate will be managed, not the entire parcel of the property. Changes have been made to clarify that the siting requirements apply to new and expanded waste management boundaries.
120 C 1 a.	120 D 1 a	Landfill siting restrictions-setback distance from any residence, school, daycare center, hospital, nursing home or recreational park	The setback distance of a new or expanded waste management boundary from any residence, school, daycare center, hospital, nursing home or recreational park is being increased from 200 feet to 500 feet. This change is being made in order to increase the setback of new and expanded waste management boundaries (from 200 feet to 500 feet) from certain receptors in order to be more protective of human health and the environment. Other state regulations (including North Carolina, South Carolina, Pennsylvania, and Delaware) were reviewed and found to have a greater setback than 200 feet. This language was drafted in consideration of RAP discussion and feedback.
120 C 1 c.	120 D 1 c	Landfill siting restrictions-setback distance facility boundary	The RAP reached consensus to change the siting setback distance of a new or expanded waste management boundary from 50 feet to 100 feet from the facility boundary. The definition of the facility boundary for a landfill includes the waste

			management boundary and other ancillaries such as scales, maintenance facilities, monitoring wells. Public comments were also submitted indicating that this distance should be increased since other states are using larger setback distances.
120 C 2.	120 D 2	No landfill siting in Resource Protection Areas	A prohibition against siting waste management boundaries within locally designated resource protection areas has been included. This protects against the loss of local resource protection areas to the development of landfill disposal areas unless it has been approved by the locality pursuant to the requirements of 9VAC25-830-10 et seq. including 9VAC25-830-150. The RAP reached consensus on this topic and agreed to require Resource Protection Areas designated by localities on the near vicinity maps for landfills.
120 I 2.	120 J 2	Notification required to Federal Aviation Administration (FAA) and affected airport if owners or operators are proposing to site a new landfill or expand an existing landfill within a certain radius of an airport runway	49 USC § 44718(d), restricts the establishment of landfills within six miles of public airports under certain conditions. The regulation has been revised to increase the radius requiring notification from five miles to six miles to be consistent with the Federal Aviation Administration’s guidance regarding landfill proximity to airports.
130 G.	130 H	Landfill Design and Construction requirements- Benchmarks	Additional language has been added to provide clarification to the requirements for benchmarks and for consistency with industry standards. The RAP achieved consensus on including references to survey coordinate systems in the regulations. Default datum standards are now specified, and the flexibility exists for a different datum or geographic coordinate system to be used, if appropriate.
130 H.	130 I	Surface water runoff at landfills	The regulation has been clarified to specify that the current available rainfall intensity data is to be used in plans and designs for run-on/run-off control systems. The run-on/run-off standard is based on information from the Atlas 14 data for Virginia (Volume 2, Version 3.0 from 2006) and Predictive Rainfall Intensity-Density Frequency curves (updates anticipated to be completed in 2021), both of which are maintained by the National Oceanic and Atmospheric Administration (NOAA). The RAP recommended this change be made to

			clarify that the most recent available information on current rainfall intensity data should be used when planning and designing the stormwater management system.
	130 I 4.	Erosion and sediment control at landfills	Additional language has been added to mention Erosion and Sediment Control Measures. These measures are not part of the permit but are addressed through another agency program. The intent is to highlight that the Erosion and Sediment Control Regulations may be applicable to construction of new landfill cells.
130 J 1 b.	130.K.1.b.	Sanitary Landfill- bottom liner- Alternate liner system	The term "Alternate liner system" is being removed to avoid confusion concerning alternate liners. This subdivision specifically addresses the Flexible Membrane Liner/Geosynthetic Clay Liner requirements.
130 J 1 b (2).	130.K.1.b.2	Sanitary Landfill- bottom liner- Controlled liner subgrade requirements	Consensus was reached by the RAP to remove the Unified Soil Classification requirements for the controlled subgrade from the regulation since the regulation already specifies the compaction requirements for the subgrade.
130 J 1 b (3).	130.K.1.b.3	Sanitary Landfill- bottom liner- Hydraulic conductivity of lower liner	The regulation is being updated to include the new industry standard for hydraulic conductivity. The RAP reached consensus on changing the hydraulic conductivity of the lower geosynthetic clay liner (GCL) from $1 \times 10^{-9}$ cm/sec to $5 \times 10^{-9}$ cm/sec to be consistent with industry standards.
140.	140.A	Operation requirements for landfills	Duplicative language concerning the content of Operations Manuals has been removed as it is already addressed in section 485.
	140.B.1	Operation requirements- landfill performance standards	Language has been added to address the existing statutory requirement for permitted solid waste management facilities to operate under direct supervision of a licensed waste management facility operator. The added language is consistent with the statutory language in § 10.1-1408.2 of the Code of Virginia.
140 A 4 b.	140.B.5.b	Landfill- Open burning	Changes have been made to clarify the frequency of burning of vegetative waste that is allowed at an active landfill in accordance with § 10.1-1410.3 of the Code of Virginia. This change is consistent with agency guidance. Language has also been added to limit burning at active landfills in VOC Emissions Control Areas to be

			consistent with the regulations of the State Air Pollution Control Board (9VAC5-130-40.A.10). Certain open burning activities shall not occur in VOC Emissions Control Areas during times of the year when open burning is prohibited.
140 A 4 c.	140.B.5.c.	Landfill- Fire control	New language is being added to ensure that landfills follow the fire control plan when responding to fires. The RAP reached consensus on stating in the regulations that landfill fires shall be effectively controlled and extinguished as soon as possible. RAP consensus was also achieved on adding more detail to the regulation to emphasize the use of soil in controlling landfill fires as a standard industry practice. Flexibility has been retained to allow the use other fire suppression materials as appropriate.
140 A 4 c.	140.B.5.b	Landfill- No open burning on disposal areas	This language has been removed since it is already stated in another subdivision of this section.
	140.B.5.e	Landfill- Training on fire hazards and response	Additional training requirements are being specified in the regulation in accordance with RAP consensus. The RAP agreed that active landfills should provide an annual training for their staff on the contents of the fire control plan to ensure that staff are prepared and knowledgeable of site-specific fire hazards and the steps to respond to a fire.
140 A 5.	140 B.6	Landfill- Implementation of gas management plan	Clarifications have been made throughout the text of the regulations to specify the equivalent measurement of methane by volume when compared to the lower explosive limit (or a percentage of the lower explosive limit) for methane. Language has also been added throughout the regulation to clarify the existing requirement that all probes within the gas monitoring network serve as points of compliance to monitor lateral migration of methane at the facility boundary.
	140 B.7.e	Landfill- No waste placement allowed outside of the disposal unit boundary or above the vertical design capacity	Language has been added to clarify the existing requirement that landfills shall not be overfilled. In other words, landfills shall not place waste outside the permitted landfill horizontal and vertical limits. This change prevents the facility from exceeding the final elevations specified in the permit. This language

			was drafted in consideration of RAP discussion and feedback.
140 A 13.	140 B.14.	Landfill- Internal road maintenance	Language has been added to clarify that the roadways that access monitoring locations (such as groundwater monitoring wells and gas monitoring probes) are also required to remain accessible for sampling, inspection, and routine maintenance.
140 A 16.	140.B.17.	Landfill- Self-inspection requirements and documentation	Regulatory text has been revised to clarify that as part of self-inspections, landfills shall inspect for the presence of leachate seeps so that immediate actions can be taken (in accordance with the requirements of section 210) to eliminate any seeps and manage leachate at the source of a seep in order to prevent releases outside of the landfill. Language regarding self-inspection records for solid waste disposal facilities is also being added to be consistent with the requirements of self-inspection documentation for solid waste management facilities.
	140.B.19	Landfill- Hours of operation	Language has been added to clarify that the facility shall only operate within permitted hours of operation, and allows for facilities to request a temporary extension of operational hours, if needed, to respond to emergencies. Consensus was reached by the RAP to include this flexibility in the regulation.
	140.B.20.	Landfill- Daily disposal limit/ waste storage limit	This language has been added to the regulation to clarify that the facility shall only receive and store quantities of waste allowed by the permit and allows for facilities to request a temporary increase in daily disposal limit or waste storage limits, if needed, to respond to emergencies. A similar requirement has been added for other waste management facilities. This limit is based on the specific design and operations at a facility, and the quantities are specified in the facility's permit.
	140.B.21.	Landfill- Topographic survey	A new requirement is being included in the regulation for active landfills to conduct an annual (or biennial) topographic survey and report the results to the department. The surveys will provide more accurate and updated information to the facility and the department on the current capacity and grades of the fill area, the remaining life of the landfill, and assist with planning

			for future landfill capacity. Survey reports will supplement and validate information provided in Solid Waste Information and Assessment (SWIA) reports. This survey requirement will also help to ensure that the final elevations of the landfill are as permitted and will prevent the overfilling of landfills from occurring. Landfills receiving fewer quantities of waste (those with a permitted daily disposal limit of 300 tons per day or less) are only required to conduct the survey on a biennial basis (once every 24 months) whereas all other landfills must survey and report on an annual basis (once every 12 months). Some landfills are already required by their permit to conduct these surveys. This language was drafted in consideration of RAP discussion and feedback.
140 B 1 a.	140.C.1.a	Sanitary landfill- active working face area	Language from B 1 a and B 2 are being consolidated to avoid unnecessary repeating of the same or similar requirement.
140 B 1 c.	140.C.1.c	Sanitary landfill- Daily cover	Revised language clarifies that the purpose of daily cover material also includes minimizing stormwater infiltration into the waste cell in addition to controlling disease vectors, fires, odors, blowing litter, and scavenging and clarifies that alternate cover must be applied in a way that ensures its use is as effective as using soil cover. The additional language regarding the application and use of alternate covers is consistent with existing permit language and agency guidance.
	140.C.1.d	Sanitary landfill- Cover requirements for asbestos-containing waste	Language added to clarify sanitary landfills shall comply with asbestos disposal requirements for all landfills in section 620.C.
140 B 1 c.	140.C.1.e	Sanitary landfill- 3 day cover material stockpile	This language is being moved to a separate subdivision to improve the readability of the regulations. The additional language clarifies that three-day cover stockpiles need to be as close as practicable to the working face and ready to use for multiple reasons. Inclement weather could prevent or delay access, excavation or transportation of cover material, so having the material on hand nearby would ensure daily cover can still be applied. Materials should also be in close proximity and ready to use to

			minimize the time it takes to respond to a landfill fire in order to prevent the fire from spreading to a larger area or depth. This language is consistent with current industry best practice.
140 B 1 d.	140.C.1.f	Sanitary landfill- Intermediate cover maintenance	The requirement to grade intermediate cover to prevent ponding was already specified for CDD landfills and is being added for sanitary and industrial landfills for consistency. This requirement is also consistent with industry best practice to minimize stormwater infiltration, reduce surface and subsurface erosion of waste and cover materials, and minimize the generation of excess leachate.
140 B 1 f.	140.C.1.g	Sanitary landfill- Final cover maintenance	Language has been added to clarify final cover maintenance at active landfills that have not yet entered post-closure care. It is very common for landfills to close and cap some areas, while other areas are still receiving waste. The areas that have been closed still require maintenance similar to the maintenance required under the post-closure care section of the regulations.
140 B 2.		Sanitary landfill- Active working face area	Language consolidated with 1 a of this subsection.
140 C 1 b.	140.D.1.e	CDD landfill- Soil cover and cover requirements for asbestos-containing waste	Language was updated to clarify the purpose of soil cover at a CDD landfill. Soil cover is needed at CDD landfills to control fire, odor, litter, and minimize stormwater infiltration. Other language was added to clarify that CDD landfills shall comply with asbestos disposal requirements for all landfills in section 620.C.
	140.D.1. c.	CDD landfill-3 day cover material stockpile	The additional language clarifies that three-day cover stockpiles need to be as close as practicable to the working face and ready to use for multiple reasons. This is currently a requirement that is applicable to Sanitary and Industrial landfills. This requirement is being added for Construction Demolition Debris Landfills. Inclement weather could prevent or delay access, excavation or transportation of cover material, so having the material on hand nearby would ensure progressive cover can still be applied. Materials should also be in close proximity and ready to use to minimize the time it takes to respond to a landfill fire in order to prevent the fire from spreading to a larger area or depth.

140 C 1 d.	140.D.1 d.	CDD landfill- Intermediate cover maintenance	This requirement already existed for sanitary and industrial landfills and is being added for construction/demolition/debris landfills for consistency. Intermediate cover should be maintained to ensure waste is not exposed, and to minimize stormwater infiltration and excess generation of leachate. This requirement is consistent with industry best practice.
140 C 1 e.	140 D 1 f.	CDD landfill- Final cover maintenance	Language has been added to clarify final cover maintenance at active landfills that have not yet entered post-closure care. It is very common for landfills to close and cap some areas, while other areas are still receiving waste. The areas that have been closed still require maintenance similar to the maintenance required under the post-closure care section of the regulations.
140 D 1 b	140.E.1.b	Industrial landfill- Lift height	The reference to fly ash as an example of non-compactable waste has been removed.
140 D 1 c.	140.E.1.c	Industrial landfill- Weekly soil cover unless alternate methods approved	This requirement has been revised to change the minimum cover standard for industrial landfills from “periodic cover” to a weekly 6-inch compacted soil cover, unless alternate methods are approved by the Department that are just as effective as weekly soil cover at controlling fires, odors, litter, minimizing stormwater infiltration and preventing erosion and displacement of waste. The previous requirement for “periodic cover” was undefined (i.e. no minimum frequency or thickness). The absence of a requirement to provide cover at a specified frequency has resulted in working face areas not being minimized and waste material being exposed to the environment for longer periods of time. The department has observed an increase in the number and severity of occurrences of fires, odors, blowing litter, stormwater infiltration, excess leachate generation, surface and subsurface erosion of waste, waste slides, compromised stability, and releases of waste and leachate at industrial landfills. The new requirement is proposed in order to be more protective of human health and the environment and provides consistency with the weekly cover requirement for CDD landfills. In consideration of RAP

			feedback, the amended regulation recognizes that the nature, type, and quantity of accepted wastes are unique to each industrial landfill, and allows the department to evaluate alternate methods proposed by the facility to address the same performance standards. If alternate methods are not effective in addressing these issues, then the weekly 6-inch compacted soil cover is required.
140 D 1 c.	140 E 1 d.	Industrial landfill- Cover requirements for asbestos-containing waste	This language clarifies that industrial landfills shall comply with asbestos disposal requirements for all landfills in section 620.C.
140 D 1 c.	140 E 1 e.	Industrial landfill- 3 day cover material stockpile	This language clarifies the existing requirement for three-day cover stockpiles to be maintained at industrial landfills and clarifies that the stockpiles need to be as close as practicable to the working face and ready to use for multiple reasons. Inclement weather could prevent or delay access, excavation or transportation of cover material, so having the material on hand nearby would ensure cover can still be applied when needed. Materials should also be in close proximity and ready to use to minimize the time it takes to respond to a landfill fire in order to prevent the fire from spreading to a larger area or depth.
140 D 1 d.	140 E 1 f.	Industrial landfill- Intermediate cover maintenance	Language is being revised in order to establish a consistent intermediate cover standard for all landfill types. An allowance for alternate weekly cover materials and alternate schedules for cover application has been retained and addressed in the new subdivision c above. A requirement for intermediate cover to be graded to prevent ponding was already specified for CDD landfills and is being added for sanitary and industrial landfills for consistency. This requirement is also consistent with industry best practice to minimize stormwater infiltration, reduce surface and subsurface erosion of waste and cover materials, prevent slope failures and waste slides, and minimize the generation of excess leachate.
140 D 1 f.	140 E. 1 h.	Industrial landfill- Final cover maintenance	Language has been added to clarify final cover maintenance at active landfills that have not yet entered post-closure care. It is very common for landfills to close

			and cap some areas, while other areas are still receiving waste. The areas that have been closed still require maintenance similar to the maintenance required under the post-closure care section of the regulations.
140 D 2.	140.E.2	Industrial landfill- Dust control	This language clarifies the existing requirement for industrial landfills to use dust control measures when managing any wastes that could become airborne and distinguishes dust control requirements from cover requirements.
160 B f.	160.C.f	Closure requirements- landfill closure cost estimates	Language has been added to clarify that the closure cost estimate in the closure plan must include the costs of removing stockpiles of material at the site that are approved for beneficial use. In the event the facility was to close, the material stockpiled for beneficial use would need to be removed as part of closure of the facility. This change to the regulation was made in response to the Secretary of Natural and Historic Resources' report to the Governor in response to Executive Order 6 (2018). The report recommended that the regulations be revised to ensure that facilities provide adequate financial assurance that they can fund cleanup and closure. This amendment will require facilities' closure cost estimates to include costs for removal of beneficial use materials (which were not included previously) when calculating the financial assurance a facility is required to provide for closure of the facility. Similar language is being added for closure plans of other solid waste management facilities. This change is also consistent with existing agency guidance. This change protects the citizens of the Commonwealth from having to pay for the removal and disposal of beneficial use material if a facility fails to properly close.
160 D 2 d (3).	160.E.2.d.3	Closure requirements- Sanitary landfill protective cover layer requirements	The regulation is being revised to recognize that the protective cover layer is for the protection of both underlying layers (the barrier layer and the infiltration layer).
160 D 2 e (1).	160.E.2.e.1	Closure requirements- CDD and industrial landfill barrier layer requirements	This change has been incorporated into this amendment based on RAP consensus to allow a barrier layer of a CDD or industrial landfill alternate cover system to be 30 mils in thickness if using PVC.

160 D 2 e (2).	160.E.2.e.2	Closure requirements- CDD and industrial landfill protective layer requirements	The term "infiltration layer" is being replaced with "barrier layer" for clarification and consistency with existing language in this subsection. Changes were discussed with the RAP.
160 D 4.	160.E.4	Closure requirements- landfill closure certification	The regulation has been revised to clarify that the certification to be provided is a certification that the CQA plan has been successfully completed.
170 A 1 a.	170.B.1.a	Post-closure care requirements- final cover maintenance	Language regarding mowing of final cover vegetation was previously only found in the operations section of the regulation but is also an applicable requirement for a facility that is in post-closure care. Language is also being added to clarify other maintenance requirements related to vegetation on the final cover. Certain types of vegetation should not be allowed on the final cover of the facility due to damage the root structure of the vegetation can cause. In some cases woody vegetation naturally grows on the final cover and will need to be removed as part of maintaining the integrity of the final cover.
	170 B 2 d.	Post-closure care requirements- quarterly inspections	A requirement for quarterly inspections to be conducted is being added to the regulations for consistency with current post-closure care plans in landfill permits, existing agency guidance on post-closure care, and industry best practices. The quarterly self-inspections will be conducted by the owner or operator to monitor conditions at the facility during post-closure care. A checklist is required to be completed and maintained and available for review to verify self-inspections are occurring.
170 B 3 a. 170 B 3 b.	170.C.3.a 170.C.3.b	Post-closure care requirements- certification to demonstrate reduction of post-closure care period	The regulation is being revised to allow a professional geologist (in addition to a professional engineer) to provide an evaluation of the landfill's potential for increased risk to human health and the environment if the post-closure care period is decreased.
170 C 1 a. 170 C 1 b.	170.D.1.a 170.D.1.b	Post-closure care requirements- certification to request termination of post-closure care	The regulation is being revised to allow a professional geologist (in addition to a professional engineer) to provide a certification that the post-closure care has been conducted as required by the post-closure care plan.
170 C 3 170 C 4 170 C 5	170 D 3, 170 D 4, 170 D 5.	Post-closure care requirements- public participation requirements	New language has been added to address the public participation requirements for termination of post-

		for termination of post-closure care	closure care of solid waste disposal facilities. The additional steps are part of the current process used by the department as outlined in agency guidance and ensure that adjacent land owners and occupants are aware of the post-closure care termination and have opportunity to provide comment. A combination of public participation requirements from guidance and for permitting was used to outline a standard procedure.
200.	200.A	Control of decomposition gases	References to applicable air regulations are being updated.
200 A 1 a. 200 A 1 b. 200 C 1. 200 C 2.	200.B.1.a 200.B.1.b 200.C.1 200.C.2	Control of decomposition gases- general requirements	Clarifications were made throughout the text of the regulations to specify the equivalent measurement of methane by volume when compared to the lower explosive limit and to clarify the existing requirement that all probes within the gas monitoring network serve as points of compliance to monitor lateral migration of methane at the facility boundary
200 A 2.	200.B.2	Control of decomposition gases- general requirements	Language has been added to the regulation to clarify the minimum requirements for landfill operators to demonstrate that there is no potential for gas migration in order to request approval to terminate quarterly gas monitoring.
200 B 3.	200.C.3	Control of decomposition gases- additional monitoring required by air regulations	References to applicable air regulations are being updated.
200 B 4.	200.C.4	Control of decomposition gases- minimum monitoring frequency	Language has been added to the regulation to clarify the expectation for representative quarterly monitoring that is sufficient to detect landfill gas migration and is consistent with industry practice as well as current agency guidance.
200.B.5	200 C 5.	Control of decomposition gases- gas monitoring probes	This language was added to clarify the requirements for operating and maintaining the gas monitoring network and to improve the accuracy of data collected at the facility. This language was drafted in consideration of RAP feedback and consensus.
200.C.1.c	200 D 1 c.	Control of decomposition gases- gas remediation-action level exceedance	Revisions have been made to this subdivision to clarify that increased monitoring to address risk to public health and safety may be necessary following an action level exceedance. The additional language is consistent with industry practice as well as

			requirements in existing landfill permits and current agency guidance.
200 C 2 a. 200 C 2 b. 200 C 2 c.	200 D 2 a. 200 D 2 b. 200 D 2 c.	Control of decomposition gases- gas remediation-compliance level exceedance	This change is being made to clarify the minimum steps the facility must take following a compliance level exceedance. The additional language is consistent with industry practice as well as requirements in existing landfill permits and current agency guidance
200.C.2.d	200.D.2.d	Control of decomposition gases- gas remediation-compliance level exceedance- notification to adjacent properties	A new requirement that is more protective of public safety, human health and the environment has been added in this subdivision. The RAP achieved consensus that the regulations should require landfills to notify other properties of compliance level exceedances (methane gas detected at or above the lower explosive limit) and offer to provide monitoring, when occupied structures are within 500 feet of the detected methane. This requirement will ensure that landfills are making other nearby properties aware of potential safety concerns and will prompt facilities to resolve subsurface methane gas migration in a more timely manner. The notification is required at the first compliance level exceedance of a probe and then again when the issue has been corrected (i.e. when the exceeding probe is again returned to a quarterly monitoring frequency), unless the exceedance continues after a year. If the exceedance continues after a year, the landfill should re-notify the other nearby property to keep them updated on the status of remediation for the subsurface methane migration. If the probe returns to compliance (quarterly monitoring) and has another compliance level exceedance, the notification process would restart. The notification process is required for each probe that exceeds the compliance level for methane.
200 C 2 e.	200.D.2.e	Control of decomposition gases- compliance level exceedance- assessment of gas probe spacing	The regulation has been revised to specify that probe spacing in the gas monitoring network shall be assessed following a compliance level exceedance to ensure that the network is sufficient to address any new receptors or potential migration pathways posed by current activities on nearby properties that may not have been present when the network was originally designed. The additional language is consistent with industry best

			practice as well as requirements in existing landfill permits and current agency guidance.
200 C 4.	200.D.4	Control of decomposition gases- Gas remediation system	References to applicable air regulations are being updated.
200 C 5.	200.D.5	Control of decomposition gases	Language previously found in this subdivision regarding notification procedures is now addressed under 200 C 2 and 530 C 3. Landfills are already required to notify DEQ of unusual conditions that may endanger human health and the environment. New language has been included in this subdivision that specifies certain types of unusual conditions identified by the RAP that may endanger human health and the environment, and include subsurface heating events, which are indicative of, or could cause subsurface fire, combustion, subsurface reaction or oxidation. The language clarifies that the landfill shall also take immediate actions as necessary to investigate and control those conditions.
200.D.1	200 E 1.	Odor management- odor complaints	Additional requirements are being included in the regulation to ensure that landfills appropriately address odor complaints received from the public. This language is consistent with industry best practice and current agency guidance and was drafted in consideration of RAP feedback.
200 D 1. 200 D 2.	200 E 2.	Odor management- Odor management plan	This subdivision has been reorganized and clarifications have been made to specify that the odor plan shall also include odor complaint response procedures and remedial measures for odor control for consistency with industry best practice and current agency guidance.
200 D 3.	200.E.3	Odor management- Annual review and update of odor management plan	Changes have been made to clarify the intent of the original requirement to annually review and update the odor management plan to ensure the remedial measures are effective to address current odor concerns at the facility. Additional actions may be required for the facility to address ongoing odor complaints or persistent odor issues. The actions listed in the regulations are consistent with industry best practice and current agency guidance to minimize odor migration offsite.

<p>200 E 1. 200 E 3.</p>	<p>200.F.1 200.F.3</p>	<p>Recordkeeping</p>	<p>Additional details have been included concerning the concentration to be recorded and calibration procedures. Calibration information for landfill gas monitoring equipment is required to be documented as part of facility recordkeeping requirements in order to demonstrate that equipment has been calibrated to obtain accurate measurements during landfill gas monitoring. Calibration information to be recorded is consistent with industry standards, permit requirements (landfill gas management plans), and agency guidance, and this language was drafted in consideration of RAP discussion and feedback. The air regulations similarly require calibration of equipment used to monitor landfill surface emissions.</p>
<p>210 A 2.</p>	<p>210.A.2</p>	<p>Leachate control- collection system design, construction, and operation</p>	<p>Changes have been made to the regulation to clarify that the leachate collection system shall not only be designed and constructed to maintain less than a 30 cm depth of leachate, but shall also be operated to maintain less than a 30 cm depth of leachate over the liner. This was the intent of the original requirement but is being clarified in this amendment.</p>
<p>210.G</p>	<p>210 G.</p>	<p>Leachate control- sampling and analysis</p>	<p>Additional language has been added to recognize that it may be necessary for a facility to conduct sampling of surface water, stormwater, or other receptors to confirm if leachate has been released or discharged so that appropriate remedial actions can be determined and implemented.</p>
<p>250.</p>		<p>Groundwater Monitoring Program</p>	<p>Throughout this section references to Column C of Table 3.1 have been added to address potential emerging contaminants for which monitoring may be required for all landfills in the future. Column C includes contaminants that the Virginia Department of Health (VDH) is reviewing to potentially establish MCLs. The RAP was in agreement with the proposed addition of Column C and framework to address the potential monitoring of emerging contaminants. Column C may be modified in the future based on actions taken by VDH to address emerging contaminants. MCLs must be adopted by VDH before this regulation will require monitoring for these constituents. For further</p>

			clarification, the Department will add a footnote to Table 3.1 stating: “ <i>The requirement to sample for the constituents listed in Column C above shall not become effective until the Virginia Department of Health has promulgated MCL’s</i> ”.
250 A 2 c.		Groundwater Monitoring- General requirements- Director’s authority	The word “sampling” has been added to clarify that the groundwater monitoring and reporting requirements also include sampling.
250 A 3 a (2).	250 A 3 a (1).	Groundwater monitoring system requirements	These subdivisions have been revised to clarify that the uppermost aquifer must be monitored unless a variance has been granted for the location of monitoring wells. This clarification is needed since multiple types of variances are available.
250 A 3 c.		Groundwater Monitoring- Well construction	Additional language has been added to specify the information that needs to be included in the groundwater monitoring plan concerning the monitoring well installation and construction. Including this information here assists the regulated community with complying with the requirements of the groundwater monitoring plan.
	250 A 3 c (4).	Groundwater Monitoring- Well construction	Language has been added to clarify that the well screen needs to be installed at a depth that will always yield water for sampling.
250 A 3 e.	250 A 3 e (1) and (2).	Groundwater Monitoring- Well maintenance	Additional language has been included in the regulation to specify minimum requirements for maintaining groundwater wells. This includes labeling and locking the well, and maintaining the concrete apron surrounding the well to protect the integrity of the well.
250 A 3 e.	250 A 3 f.	Groundwater Monitoring- Well replacement	Requirements for well replacement have been separated from requirements pertaining to well maintenance to add additional clarity to the regulation. Language has been added to address the process for abandonment of non-functioning wells.
250 A 3 f (1) (c).	250 A 3 g (1) (c).	Groundwater Monitoring- Network specifics	Regulation has been amended to clarify that there may be multiple confining units for aquifers and that all should be considered when developing the groundwater monitoring network.
250 A 3 (g) (1) (d).	250 A 3 g (1) (e).	Groundwater Monitoring- Listing of technical information to be provided	This is not a new requirement. Previously this information was listed in 250 A 3 (g) (1) (d) but has been moved

		on groundwater monitoring network	to a new subsection (e) to make it easier to understand the information required to be submitted concerning the groundwater monitoring network.
250 A 3 g.	250 A 3 h (1) and 250 A 3 h (2).	Groundwater Monitoring-Monitoring well certification	The requirements of this subdivision have been separated to clarify the actions to occur within 30 days of well installation to certify monitoring wells.
250 A 4 a.		Groundwater Monitoring-Quality assurance and control	Language has been added to the regulation to clarify that the quality assurance and control program is to be described in the groundwater monitoring plan.
250 A 4 b.	250 A 4 b (1), 250 A 4 b (2), 250 A 4 b (3).	Groundwater Monitoring-Analytical Methods	Requirements in the subdivision have been listed separately to assist with improving clarity concerning the requirements. Language has been added to specify that EPA SW-846 methods are required for constituents found in Columns A and B of Table 3.1. This change is being made to distinguish between testing methods required for constituents listed in Columns A, B, and C. This will provide flexibility for Column C constituents to be tested using non-EPA SW-846 test methods. Additional reasons for the department requesting re-sampling to occur have also been included for clarification.
250 A 4 f.		Groundwater Monitoring-Sampling and statistics-collection of groundwater samples by bailers	Language has been added to the regulation to specify that collection of groundwater samples through the use of dedicated bailers must be approved by the department. The regulation does not currently address the use of bailers. The use of bailers is not the preferred method of sampling groundwater due to challenges with maintaining the integrity of the groundwater sample.  To remove any unintended confusion related to the use of the term " <i>dedicated</i> " in the proposed regulatory text, that word is herein removed.
250 A 4 h (3).		Groundwater Monitoring-Evaluation and response	The phrase "by the department" has been added to this subdivision to clarify the department will not accept qualified or non-final determinations concerning notifications. Previously it was implied that the department would not accept these notifications.
250 A 4 i.		Groundwater Monitoring-Verification sampling	Language has been added to clarify that there may be one or multiple wells requiring verification sampling.

250 A 5 a.		Groundwater Monitoring- Alternate source demonstration allowance	Minor editorial correction made to change “anytime” to “any time”.
250 A 5 c (2) (b).		Groundwater Monitoring- Evaluation and response to alternate source demonstration	The 90 day timeframe is being removed from the regulation and is being replaced with a date selected by the director. This provides the director the option of providing the operator additional time to complete changes to the monitoring system, and would be reflective of the type of changes that are needed.
250 A 5 c (2) (c).		Groundwater Monitoring- Evaluation and response to alternate source demonstration	The requirement for the permit to be modified within 90 days of the approval of the alternate source demonstration is not needed and is being removed. The permit will be modified and approved as detailed in 9VAC20-81-600.
250 A 6 a.		Groundwater Monitoring- Establishment of groundwater protection standards- requirements	When participating in the Assessment or Phase II monitoring program, once a statistically significant increase over background has been recognized, groundwater protection standards shall be proposed by the owner or operator for detected constituents in both Column B and C (emerging contaminants).
250 A 6 b (1).		Groundwater Monitoring- Establishment of groundwater protection standards- establishment process	Language has been added to the regulation to require groundwater protection standards to be established for any constituents that have a maximum contaminant limit (MCL) established by Virginia Department of Health (VDH) regulation. VDH is currently evaluating the need to establish MCLs for additional constituents (emerging contaminants).
250 A 6 e.		Groundwater Monitoring- Alternate concentration level revisions	The regulation has been clarified to address revisions to alternate concentration limits (ACLs). The approved ACL on the date of the sampling event shall be used.
250 B 2 a.		Groundwater Monitoring- Detection monitoring sampling requirements	Facilities in detection monitoring are required to sample for constituents in Column A and Column C of Table 3.1. VDH is currently evaluating the need to establish MCLs for additional constituents (emerging contaminants) that are listed in Column C. References to the requirement to monitor for Column C constituents have been added to the detection monitoring program. In the future, if maximum contaminant levels (MCLs) are established by Virginia Department of Health (VDH) regulation, those constituents would be listed in Column C. Column C currently lists

			constituents for which VDH is considering establishing MCLs.
250 B 2 a (1) (a).	250.B.2.a.1.b.	Groundwater Monitoring-Detection monitoring program sampling requirements- initial sampling	The regulation is being revised to require 8 instead of 4 independent groundwater samples from each well. This change is being made to be consistent with EPA's 2009 statistical guidance. Additionally, language has been added to allow the facility to sample wells prior to the receipt of waste. This provides more flexibility to the operational requirement for the facility, and this change would not negatively impact human health and the environment.
250 B 2 a (2).		Groundwater Monitoring-Subsequent monitoring events	Language pertaining to background monitoring has been removed from this subdivision and moved to 9VAC20-81-250 B 2 a (4). More details concerning background sampling have been provided in a new subdivision (4) below.- 9VAC20-81- 250 B 2 a (4)
	250 B 2 a (4).	Groundwater Monitoring-Data from background wells during subsequent monitoring events	This requirement was previously included in 250 B 2 a (2) but has been included in a separate subdivision. Background well sampling information is to be used to re-establish background values to maintain an accurate representation of groundwater quality. This change is consistent with EPA's 2009 statistical guidance.
	250 B 2 b (1) (c).	Groundwater Monitoring-Statistically significant increase evaluation and response	This subdivision was created to improve the readability of the subdivision and the understanding of the requirements found in subdivision 250 B 2 b (1).
250 B 3.		Groundwater Monitoring-Assessment monitoring program sampling requirements	Facilities in assessment monitoring are required to sample for constituents in Column B and Column C of Table 3.1. VDH is currently evaluating the need to establish MCLs for additional constituents (emerging contaminants) that are currently listed in Column C. Changes to the constituents listed in Column C may be necessary prior to finalizing this amendment in response to VDH establishing maximum contaminant limits (MCLs) for emerging contaminants. References to the requirement to monitor for Column C constituents have been added to the assessment monitoring program.
250 B 3 b (1).		Groundwater Monitoring-Assessment monitoring program-well subsets	Language has been added to the regulation to allow the director to approve a subset of wells to remain in detection monitoring when other monitoring wells are in assessment

			monitoring. All wells continue to be monitored; however, it may not be appropriate to monitor all wells for all constituents. New wells will be allowed to be part of the well subset based on the initial monitoring event. This change is a clarification of what is currently allowed by the regulation.
250 B 3 b (1) (b).		Groundwater Monitoring-Assessment monitoring-establishment of well subsets	Language has been added to clarify that if a statistically significant increase of a constituent is detected in a well in the subset, the well is no longer considered part of the detection monitoring well subset.
250 B 3 b (2).		Groundwater Monitoring-Modifications to the constituent list	Additional descriptive language has been added to assist with understanding the context of the requirement.
250 B 3 b (3).		Groundwater Monitoring-Sampling frequency	Additional descriptive language has been added to assist with understanding the context of the requirement.
250 B 3 c (3).		Groundwater Monitoring-Development of background	The regulation is being revised to require 8 instead of 4 independent groundwater samples from each well. This change is being made to be consistent with EPA's 2009 statistical guidance. Language has also been included to allow less than 8 samples to be used if approved by the department.
250 B 3 e (1).		Groundwater monitoring plan- deadline for submitting permit modification	The regulation is being amended to remove the deadline to submit a permit modification. DEQ establishes a timeframe for modification of the permit as part of the Groundwater Monitoring Plan approval.
250 B 3 e (2).		Groundwater monitoring plan- exceedance of deadline for submitting permit modification	This subdivision is no longer needed due to the removal of the timeframe for requesting a permit modification in the previous subdivision (9VAC20-81-250 B 3 e (1)).
250 B 3 f (1).		Groundwater Monitoring-Evaluation and response – reevaluation to return to detection monitoring	This change clarifies that the comparison used for returning to detection monitoring is made only for downgradient monitoring wells, not the entire monitoring well network.
250 B 3 f (2).		Groundwater Monitoring-Evaluation and response-reevaluation and remaining in assessment monitoring	This change clarifies that the comparison used for remaining in assessment monitoring is made only for downgradient monitoring wells, not the entire monitoring well network.
250 B 3 f (3).		Groundwater Monitoring-Evaluation and response-exceedance of groundwater protection standards	This change clarifies that the comparison occurs between downgradient monitoring wells and groundwater protection standards.
250 B 3 f (3) (a).		Groundwater Monitoring-Evaluation and response-	This change clarifies that the exceeding groundwater monitoring well must be

		exceedance of groundwater protection standards	identified when the department is notified of the exceedance of groundwater protection standards.
250 B 3 f (3) (b).		Groundwater Monitoring-Evaluation and response-description of results	Regulation clarifies that the sampling results are to be described in the report.
250 C 2.		Groundwater Monitoring-First determination monitoring program	The regulation is being clarified to reference sampling for Column C constituents (emerging contaminants).
250 C 2 b (1) (a).		Groundwater Monitoring-First determination monitoring program-establishment of background	The regulation is being revised to require 8 instead of 4 independent groundwater samples from each well. This change is being made to be consistent with EPA's 2009 statistical guidance.
250 C 2 b (1) (b).		Groundwater Monitoring-First determination monitoring program-establishment of background	Collection of 4 samples for background development will not be required if new wells are installed downgradient from waste disposal units that have already received waste. This is due to the fact that background has already been established for the groundwater monitoring program. This change will reduce the cost of compliance with the regulation by the cost to collect 8 samples and conduct laboratory analysis for those samples.
250 C 2 d (3).		Groundwater Monitoring-First determination monitoring program-establishment of alternate source demonstration	An editorial change has been made to the location of the language that allows for the director to provide additional time for the owner or operator to submit an alternate source demonstration. This is not a new regulatory provision.
250 C 3.		Groundwater Monitoring-Phase II monitoring	This subdivision has been reorganized to improve the readability and understanding of the requirements. Some subdivisions have been renumbered.
250 C 3 a (1), 250 C 3 b.	250 C 3 c.	Groundwater Monitoring-Phase II monitoring background development	The regulation is being clarified to reference sampling for Column C constituents (emerging contaminants).
250 C 3 d (1).	250 C 3 e.	Groundwater Monitoring-Groundwater monitoring plan- deadline for submitting permit modification	The regulation is being amended to remove the deadline to submit a permit modification. DEQ establishes a timeframe for modification of the permit as part of the Groundwater Monitoring Plan approval.
250 C 3 d (2).	250 C 3 e.	Groundwater monitoring plan- exceedance of deadline for submitting permit modification	This subdivision is no longer needed due to the removal of the timeframe for requesting a permit modification in the previous subdivision (9VAC20-81-250 C 3 d (1)).

250 C 3 e (1).	250 C 3 f (1).	Groundwater Monitoring-Evaluation and response – reevaluation to return to first determination monitoring	This change clarifies that the comparison used for returning to first determination monitoring is made only for downgradient monitoring wells, not the entire monitoring well network.
250 C 3 e (2).	250 C 3 f (2).	Groundwater Monitoring-Evaluation and response-reevaluation and remaining in Phase II monitoring	This change clarifies that the comparison used for remaining in phase II monitoring is made only for downgradient monitoring wells, not the entire monitoring well network.
250 C 3 e (3).	250 C 3 f (3).	Groundwater Monitoring-Evaluation and response-exceedance of groundwater protection standards	This change clarifies that the comparison occurs between downgradient monitoring wells and groundwater protection standards.
250 C 3 e (3) (a).	250 C 3 f (3) (a) (i).	Groundwater Monitoring-Evaluation and response-exceedance of groundwater protection standards	This change clarifies that the exceeding groundwater monitoring well or wells and associated constituent or constituents must be identified when the department is notified of the exceedance of groundwater protection standards.
250 C 3 e (3) (a).	250 C 3 f (3) (b).	Groundwater Monitoring-Evaluation and response-Alternate source demonstration	The regulatory text in this subdivision has been re-numbered to avoid confusion concerning the requirements of the regulation. No new requirements were added to the regulation.
250 C 3 e (3) (b).	250 C 3 f (3) (c).	Groundwater Monitoring-Evaluation and response-description of results	Regulation clarifies that the sampling results are to be described in the report.
	250 E 2 a (2) (g).	Groundwater Monitoring-Recordkeeping and reporting requirements- annual report-constituents identified	A new requirement for the constituents detected during the year's sampling events to be presented in a table displaying the concentration detected, the monitoring well detecting the constituents and the relevant groundwater protection standard has been included in the annual report.
250 E 2 a (2) (g) and 250 E 2 a (2) (h).	250 E 2 a (2) (h) and 250 E 2 a (2) (i).	Groundwater Monitoring-Recordkeeping and reporting requirements- annual report	Subdivisions have been renumbered in response to addition of new language in 250 E 2 a (2) (g)
250 E 2 b (1) (d).		Groundwater Monitoring-Recordkeeping and reporting- semi-annual or quarterly report- calculated rate of groundwater flow	Requirements previously found in 250 E 2 b (1) (d) and 250 E 2 b (1) (e) have been combined into a single subdivision and 250 E 2 b (1) (e) is being deleted. The language is being clarified to require the groundwater flow rate and direction to be calculated using the information collected during the monitoring events. This should be calculated for each monitoring event as part of monitoring groundwater characteristics.

250 E 2 b (1) (e).		Groundwater Monitoring-Recordkeeping and reporting- semi-annual or quarterly report-groundwater flow direction	The content of 250 E 2 b (1) (e) has been consolidated with 250 E 2 b (1) (d) and 250 E 2 b (1) (e) has been deleted.
250 E 2 b (1) (f).	250 E 2 b (1) (e).	Groundwater Monitoring-Recordkeeping and reporting- semi-annual or quarterly report	This subdivision has been renumbered.
250 E 2 b (1) (g).	250 E 2 b (1) (f).	Groundwater Monitoring-Recordkeeping and reporting- semi-annual or quarterly report- report on CD-ROM format	The regulation is being revised to reflect that reports will no longer be accepted on CD-ROM since that format is no longer needed due to the advancement of technology related to electronic submissions.
Table 3.1.		Ground Water Solid Waste Constituent Monitoring List	Column C has been added to address potential contaminants for which monitoring may be required in the future. Column C lists emerging constituents that VDH is directed to establish MCLs for in the future in response to §32.1-169 of the Code of Virginia. The content of Column C will be modified in the future, based on the actions taken by VDH to adopt MCLs for emerging constituents. MCLs must be adopted by VDH before this regulation will be amended to require monitoring for these constituents; however, this information has been included in this amendment to provide a framework for these additional monitoring constituents and to provide the regulated community with insight concerning how these new MCLs would be incorporated in monitoring requirements for solid waste disposal facilities.
260 A.	260 B.	Corrective Action program-Interim measures	Language in this subsection concerning interim measures has been removed and moved to subsection B to improve the clarity of the regulation.
260 B.	260 B 1 and 260 B 2.	Corrective action – Actions that may occur at any time	Actions that may be taken at any time during the corrective action process have been consolidated into subsection B. These are existing requirements that have been consolidated into a single subsection to improve readability.
260 C 1 b.		Corrective action-Notification of landowners over the release	Additional information is being added to the notification of landowners over the release. This includes the contaminants in the release, including the names and concentrations, that have migrated offsite. Language has also been added to clarify when the notification must occur.

260 C 1 d.		Corrective action- Financial assurance	Regulatory language has been revised to reference the requirement to provide additional financial assurance once the landfill enters corrective action. The amount of financial assurance to be provided is specified in the Financial Assurance Regulations for Solid Waste Disposal, Transfer and Treatment Facilities (9VAC20-70).
260 C 2 d (1).		Corrective action- Submission requirements- assessment of risks	Language is being added to clarify that the contamination to be addressed is groundwater contamination that has been identified at the disposal unit boundary as well as the permitted facility boundary.
260 C 2 d (2).		Corrective action- Submission requirements- groundwater trends	Language has been added to include information on the site's groundwater background data in addition to the groundwater protection standards as part of the corrective action evaluation.
260 C 2 f (a), 260 C 2 f (b), 260 C 2 f (c), and 260 C 2 f (d).	260 C 2 f (1), 260 C 2 f (2), 260 C 2 f (3), and 260 C 2 f (4).	Corrective action- presumptive remedy	Editorial changes have been made to the numbering of these subdivisions. No change was made to regulatory requirements.
260 C 3 c (1) (a), 260 C 3 c (1) (b), 260 C 3 c (1) (c).	260 C 3 c (1), 260 C 3 c (2), and 260 C 3 c (3).	Corrective action- assessment of corrective measures	Editorial changes have been made to the numbering of these subdivisions. No change was made to regulatory requirements.
260 C 3 c (1) (d).	260 C 3 c (4).	Corrective action- Selection of remedy and management of wastes	This change clarifies that wastes generated as part of investigating contamination are to be properly managed.
260 C 3 d.		Evaluation and response- assessment of corrective measures	The phrase "without revision" is being removed since the assessment of corrective measures may need to be revised prior to the department approving. The current language does not specify an action to occur if the assessment is approved without revision.
260 C 4 a (3).		Corrective action- Public meeting process- location on physical materials for public review	Regulatory language has been clarified to require materials to be available for public review and copying in a location accessible to the public.
260 D 1 b (6) (f).		Corrective action plan requirements- schedule of remediation activities	Regulatory language has been clarified. The term "extraction" is replacing the term "removal" since it is more accurate to describe that the groundwater is extracted, not removed.

260 D 1 b (8) (f).		Corrective action plan requirements- schedule of remediation activities	The regulation is being clarified to state that the progress report will detail the work that is anticipated to be completed during the next reporting period. The current phrase "work for next reporting period" is vague and causes confusion.
260 D 2 d (2).		Proposed corrective action plan review by director	Language is being included in the regulation to address use of the Uniform Environmental Covenants Act (UECA) Regulation (9VAC15-90) as part of the correction action plan for a facility.
260 D 4 a, 260 D 4 b, 260 D 4 c, and 260 D 4 d.	260 D 4 a and 260 D 4 b.	Proposed corrective action plan review by director	The content from 260 D 4 a, 260 D 4 b, and 260 D 4 c is being consolidated and clarified in 260 D 4 a, and the citation referencing permit modification procedures has been corrected. 260 D 4 d has been renumbered to 260 D 4 b.
260 F 3 b.		Corrective action- Interim measures- factors to be considered- exposure	Language is being revised to reference groundwater constituents that are exceeding groundwater protection standards. Corrective action is initiated due to constituents exceeding groundwater protection standards, not due to hazardous constituents. The regulatory language now reflects terminology used in the solid waste management program.
260 F 3 e.		Corrective action- Interim measures- factors to be considered- migration potential	Language is being revised to more accurately describe the issues being examined. Conditions, not limited to weather, that may cause the groundwater constituents to further migrate or be released into the environment, including receptors such as surface waters, are to be considered. This is a more holistic approach to examining the potential for migration.
260 H 3.		Corrective Action- Remedy completion- certification and report	Language has been added to clarify a Corrective Action Completion Report should be submitted which would include the certification that the remedy has been completed and include the data relevant to the demonstration of successful remedy completion.
260 H 4 b.		Corrective action- Remedy completion- director reviews and determines	Language has been revised to improve the readability of the regulation. This subdivision provides additional clarity that the corrective actions defined in the solid waste permit are required to continue.
Part IV.		Other Solid Waste Management Facility Standards	The title of Part IV is being revised to not reference specific types of facilities. The length of the current title is being truncated in the Regulation Information System (RIS).

300.		General	Minor editorial corrections have been made.
300 F 1 c.		General- control program for unauthorized waste	Changes have been made to the regulation to clarify that staff should receive annual training on unauthorized wastes. This is needed to maintain facility staff that are able to comply with requirements of the regulation and the facility permit. This change is consistent with industry best practice as the majority of facilities are already conducting this training annually.
300 F 3.		General- control program for unauthorized waste	Citation has been updated.
	310 A 3 c (4).	Compostable and certified compostable products	Compostable and certified compostable products (such as biodegradable food containers and utensils) have been viewed to be post-consumer food waste. The regulation is being amended to include this specific type of material eligible for use as a Category III feedstock.
320 E.		Siting requirements- waste piles	Citation has been updated.
	320 F 3.	Siting requirements- compost facilities	Additional siting criteria has been added consistent with the FAA Advisory Circular No. 150/5200-33C which restricts siting of certain compost operations on or near airport operations to avoid attraction of hazardous wildlife.
	330 B 5.	Transfer station design- unloading areas	A requirement has been added for the design of solid waste transfer stations to provide sufficient internal areas for waste management in order to reduce the potential for vectors and prevent the escape of waste, wash water, odor, dust, and litter from the facility during unloading and transfer of waste. This requirement is similar to an existing requirement for other solid waste management facilities, and almost all, if not all, solid waste transfer stations already provide internal areas for unloading and management of incoming solid waste.
330 C 8, 330 D 6, 330 E 6.		Internal storage area- based on facility's daily process rate	Minor editorial clarification made for consistency with the defined term "process rate". Previously the phrase "maximum anticipated daily incoming waste" was used in this subdivision.
340.		Operational requirements applicable to all non-landfill facilities	Duplicative language concerning the content of Operations Manuals has been removed as it is already addressed in section 485.

	340 A 1.	Operational requirements applicable to all non-landfill facilities	This language addresses the existing statutory requirement for permitted solid waste management facilities to operate under direct supervision of a licensed waste management facility operator. The added language is consistent with the statutory language in § 10.1-1408.2 of the Code of Virginia.
	340 A 2.	Operational requirements applicable to all non-landfill facilities	Language has been added to clarify that the facility shall only operate within approved hours of operation, and allows for facilities to request a temporary extension of operational hours, if needed, to respond to emergencies. Consensus was reached by the RAP to include this flexibility in the regulation.
	340 A 3.	Operational requirements applicable to all non-landfill facilities	This language has been added to clarify that the facility shall only receive, process, and store approved quantities of waste based on the specific design and intended operation at the facility, and allows for facilities to request a temporary increase in daily processing rate or waste storage limits, if needed, to respond to emergencies.. A similar requirement has been added for landfills.
	340 A 4.	Operational requirements applicable to all non-landfill facilities	This requirement is being added to the operational requirements for all solid waste management facilities. The design of solid waste management facilities must already address these requirements, and this additional language clarifies that facilities must also be operated to meet these requirements on a continual basis.
	340 A 5.	Operational requirements applicable to all non-landfill facilities	This operational requirement has been added to the regulation to prevent the escape of litter from the facility and is similar to, and no more stringent than, litter control requirements for disposal facilities.
	340 A 6.	Operational requirements applicable to all non-landfill facilities	Language has been added to specify that the emergency contingency plan needs to be implemented when emergencies arise.
340 A 1.	340 B 1.	Requirements applicable to all compost facilities	Requirements for composting facilities are being reorganized. Requirements applicable to all compost facilities have been listed in subdivision 1.
340 A 1 b.	340 B 1 a.	Compost facilities- materials that may be accepted	The addition of the new subdivision a is replacing the previous language in existing subdivision b and places limits on the wastes that can be accepted for composting based on the design and intended operation of the facility.

340 A 1 d.	340 B 1 d.	Compost facilities- dust control	Citation has been corrected.
	340 B 1 i.	Compost facilities- Maintenance and inspections	Maintenance requirements for composting facilities are being re-located in the regulation to assist with clarifying the requirements of the regulation. These requirements were previously listed in 9VAC20-81-340 A 2 h but are applicable to all compost facilities.
340 A 2 a.		Compost facilities- noncompostable waste	Language has been removed to avoid duplicative requirements.
340 A 2 b.	340 B 2 a.	Clarification of compost testing requirement	Language has been added to clarify that the compost sampling frequency is applicable to all three subdivisions listed.
340 A 2 d.	340 B 2 c.	Compost testing for compost produced from Category III and IV materials	The requirement for certain compost facilities to conduct parasite testing has been removed from the regulations. Historical data from parasite testing at compost facilities has demonstrated that parasites have not posed issues with final compost quality. The majority of the compost facilities permitted under the VSWMR have demonstrated viable helminth ova reduction after one year of quarterly testing and are no longer required to conduct the testing in accordance with the existing subsection. The remaining compost facilities have been testing for less than one year, and the availability of labs offering this type of testing is limited. This test has been discontinued by VDACS labs, and there are no other VELAP accredited labs in the Commonwealth that offer this type of testing. The only VELAP accredited lab currently offering this type of test is in Florida. In addition, neither the U.S. Composting Council's Seal of Testing Assurance Program, nor the U.S. Composting Council's latest version of the Model Compost Rule require parasite testing.
340 A 2 f. 340 A 2 g. 340 A 2 h. 340 A 2 i.	340 B 1 g. 340 B 1 h. 340 B 1 i.	Compost facility requirements	Language in these subdivisions has been moved to other locations in the regulation as part of the reorganization of the regulation. Requirements for buffer zones (A 2 f), maintenance and inspections (A 2 h), and leachate control (A 2 i) are applicable to all compost facilities and have been relocated to 340 B 1 as part of the reorganization of composting requirements. Operations plan requirements for compost facilities are being addressed under section 485 in the regulation, for consolidation with

			other Operations Manual requirements. Some language has been removed because it is duplicative of existing requirements for the content of Operations Manuals. Separate language limiting compost storage is no longer needed in the compost section as new language has been added to subsection A for all solid waste management facilities that requires compliance with the approved storage capacity.
340 B 2. 340 B 3.		Transfer stations- operating plan and contingency plan	This information has been moved to 485 B to consolidate all operations plan and emergency contingency plan requirements in a single location under the Operations Manual section of the regulation.
340 B 5.	340 C 3.	Transfer stations- household hazardous waste storage	Citation for federal regulations has been corrected to reference standards for container storage areas. The previous citation referenced hazardous secondary materials, which was incorrect.
	340 C 4. 340 C 5. 340 C 6.	Transfer stations- operational requirements	This language clarifies the operational requirements for transfer stations to ensure that uncontainerized putrescible waste and waste residues are not left on the tipping floor. If waste residues are not cleaned from the floors and ramps on a regular basis, there is an increased risk for odor, disease vectors, dust, and blowing litter. Floor drains need to be kept free flowing, and tipping floors and ramps need to be maintained, in order to prevent releases of leachate and waste.
340 C 3. 340 C 4.		Centralized waste treatment facilities- operating plan and contingency plan	This information has been moved to 485 B to consolidate all operations plan and emergency contingency plan requirements in a single location under the Operations Manual section of the regulation.
	340 D 5. 340 D 6. 340 D 7.	Centralized waste treatment facilities- operational requirements	This language clarifies the operational requirements for centralized waste treatment facilities to ensure that waste residues are removed from floors and ramps on a regular basis to avoid an increased risk for odor, disease vectors, dust, and blowing litter. Floor drains need to be kept free flowing, and tipping floors and ramps need to be maintained, in order to prevent releases of leachate and waste.
340 D 3. 340 D 4.		Materials recovery facilities- operating plan and contingency plan	This information has been moved to 485 B to consolidate all operations plan and emergency contingency plan requirements in a single location under

			the Operations Manual section of the regulation.
	340 E 4. 340 E 5. 340 E 6.	Materials recovery facilities – operational requirements	This language clarifies the operational requirements for materials recovery facilities to ensure that uncontainerized putrescible waste and waste residues are not left on the tipping floor. If waste residues are not cleaned from the floors and ramps on a regular basis, there is an increased risk for odor, disease vectors, dust, and blowing litter. Floor drains need to be kept free flowing, and tipping floors and ramps need to be maintained, in order to prevent releases of leachate and waste.
340 E 2. 340 E 4.		Waste to energy and incineration facilities- operating plan and contingency plan	This information has been moved to 485 B to consolidate all operations plan and emergency contingency plan requirements in a single location under the Operations Manual section of the regulation.
	340 F 6. 340 F 7. 340 F 8.	Waste to energy and incineration facilities- operational requirements	This language clarifies the operational requirements for waste to energy and incineration facilities to ensure that waste residues are removed on a regular basis. If waste residues are not cleaned from the floors and ramps on a regular basis, there is an increased risk for odor, disease vectors, dust, and blowing litter. Floor drains need to be kept free flowing, and tipping floors, ramps, and other surfaces need to be maintained, in order to prevent releases of leachate and waste.
340 F 2. 340 F 3.		Waste piles- operating plan and contingency plan	This information has been moved to 485 B to consolidate all operations plan and emergency contingency plan requirements in a single location under the Operations Manual section of the regulation.
350 1.		Recordkeeping requirements applicable to non-landfill facilities	The regulation is being amended to specify that self-inspections shall be conducted monthly at a minimum. This requirement is similar to the inspection requirement for disposal facilities. Previously, the inspection frequency for these facilities was not specified in regulation, which created confusion and inconsistencies. The majority of non-landfill facilities already conduct self-inspections monthly or more frequently.
360 2.		Closure requirements- closure cost estimates	Language has been added to clarify that the closure cost estimate must be included in the closure plan and must include the costs of removing stockpiles

			<p>of material at the site that are approved for beneficial use. In the event the facility was to close, the material stockpiled for beneficial use would need to be removed as part of closure of the facility. This was a needed change to the regulation in response to the Secretary of Natural and Historic Resources' report to the Governor in response to Executive Order 6 (2018). The report recommended that the regulations be revised to ensure that facilities provide adequate financial assurance that they can fund cleanup and closure. This amendment will require facilities' closure cost estimates to include costs for removal of beneficial use materials (which were not included previously) when calculating the financial assurance a facility is required to provide for closure of the facility. Similar language is being added for closure plans of other solid waste disposal facilities. This change is also consistent with existing agency guidance. This change protects the citizens of the Commonwealth from having to pay for the removal and disposal of beneficial use material if a facility fails to properly close.</p>
370 A 2.		Closure requirements for surface impoundments and lagoons	Minor editorial corrections have been made.
380 C 4.		Remediation waste management units	Minor editorial corrections have been made.
385 B.		Landfill mining	Regulatory language has been revised to clarify activities which do not constitute landfill mining and to distinguish the landfill mining plan from the operations manual. The landfill mining plan is a required permit document for review and approval by the department, whereas the operations manual is not a permit document and is updated regularly by the facility.
395 F.		Miscellaneous facilities	Minor editorial corrections have been made.
397 B 2.		Exempt yard waste composting facilities	The term "yard waste" is being removed to allow agricultural operations receiving all Category I feedstocks to potentially be exempt from other provisions of the regulation if certain criteria is met. Category I feedstock may contain yard waste as a component, but is not required to contain yard waste to potentially qualify for this exemption.

			This change allows more flexibility concerning composting requirements.
397 C.		Small disposal units for vegetative waste	Minor editorial corrections have been made.
410 A 2.		Permits by rule- Submission	Language is being added to clarify that the agency's DEQ Form SW PBR (Solid Waste Management Facility Permit-by-Rule Application) shall be provided as part of the submission for a permit-by-rule. Applicants have already been using this form to apply for a PBR for almost a decade. This form provides a streamlined process for applicants to submit information to the department and has been posted on the agency's website and included in submission instructions guidance on VA Town Hall since 2012.
410 B 5.		Emergency permits	The language describing the conditional exemption for open burning allowed during a state of emergency has been moved to section 9VAC20-81-95, for inclusion with the existing list of all other conditionally exempt activities related to open burning. There is no change to this regulatory requirement.
450 B 6.		Notice of intent- Host agreement	Language is being added to clarify that the DEQ Form SW-11-2 (Host Agreement Certification Request) shall be provided with the notice of intent, as part of the permit application process, when a host agreement with the locality is required for a new private sanitary landfill or expansion to a private sanitary landfill. It is already standard practice for applicants to submit this form to certify that the host agreement includes all information required by the statute (§10.1-1408.1 B 7 of the Code of Virginia).
450 C 1.		Part A application	The number of paper copies of an application required to be submitted is being reduced to one paper copy and one electronic copy. A certification that currently appears on the application form has been added to the regulation for consistency.
450 D 1.		Part B application	The number of paper copies of an application required to be submitted is being reduced to one paper copy and one electronic copy. A certification that currently appears on the application form has been added to the regulation for consistency.

460 C 9.		Part A permit application- vicinity map	A requirement has been added for the vicinity map to delineate Resource Protection Areas designated by localities, in order to prevent siting of landfills in those areas. The RAP reached consensus on requiring these areas to be included on the vicinity maps.
470 A 1 j.	470.B.1.j	Permit application for solid waste disposal facilities- design plan sheets	New language has been added to ensure that plan sheets submitted to the Department identify the datum, units of measure, and coordinate systems associated with location information for the site.
470 A.		Permit application for solid waste disposal facilities	Minor editorial corrections have been made.
485 A.		Operations manual requirements for solid waste disposal facilities	The annual certification is being revised to occur at least once every 12 months for consistency with other requirements that are due on an annual basis. All facilities are already recertifying at least once every 12 months in accordance with existing agency guidance.
485 A 1 c. 485 A 1 d.		Operations plan requirements	Minor editorial clarifications have been made for consistency with operations plan requirements for other solid waste management facilities. The facility's daily disposal limit and methods for noise control should be included in the plan to ensure compliance with the operations requirements in section 140. Language has been added to ensure that facilities have site-specific protocols in their operations plan to help them prepare for severe weather and storm events. This is needed to address the increasing frequency of severe weather and increasing severity of storm events observed in Virginia.
	485 A 1 e.	Operations plan requirements- leachate collection system maintenance	A new subdivision has been added to identify information and instructions required in a landfill Operations Manual that is necessary for the site operator to ensure proper leachate management to achieve compliance with the regulations. This list is consistent with language in current agency guidance and standard industry practices.
485 A 2 b.		Inspection plan requirements	Language has been modified to require the frequency of inspections in the inspection plan to be consistent with the self-inspection requirements under section 140.
	485 A 5 e.	Emergency contingency plan requirements	Procedures for periods of nonoperation are being added for disposal facilities.

			Other facilities are already required to address non-operation in their emergency contingency plan.
	485 A 5 f.	Active landfills- fire control plan	Details are being added to the regulation concerning the content of the fire control plan in response to consensus from the RAP. This information is needed to ensure that landfill staff are prepared to control and extinguish any fires that may occur.
485 B.		Operations manual requirements for other solid waste management facilities	The annual certification is being revised to occur at least once every 12 months for consistency with other requirements that are due on an annual basis. All facilities are already recertifying at least once every 12 months in accordance with existing agency guidance.
485 B 1 b.		Operations plan requirements	This change consolidates items to be included in all operations plans into a single location. This change reduces duplicative language in the regulation. Language has been added to ensure that facilities have site-specific protocols in their operations plan to help them prepare for severe weather and storm events. This is needed to address the increasing frequency of severe weather and increasing severity of storm events observed in Virginia.
	485 B 1 e.	Operations plan requirements for composting facilities	Language was relocated from section 340 to section 485 to consolidate all operation plan content requirements into a single location for ease of use. Section 340 requires operations plans to be developed and implemented, and Section 485 specifies the contents of the plan.
	485 B 1 f.	Operations plan requirements for centralized waste treatment facilities	Language was relocated from section 340 to section 485 to consolidate all operation plan content requirements into a single location for ease of use. Section 340 requires operations plans to be developed and implemented, and Section 485 specifies the contents of the plan.
	485 B 1 g.	Operations plan requirements for materials recovery facilities	Language was relocated from section 340 to section 485 to consolidate all operation plan content requirements into a single location for ease of use. Section 340 requires operations plans to be developed and implemented, and Section 485 specifies the contents of the plan.
	485 B 1 h.	Operations plan requirements for waste piles	Language was relocated from section 340 to section 485 to consolidate all

			operation plan content requirements into a single location for ease of use. Section 340 requires operations plans to be developed and implemented, and Section 485 specifies the contents of the plan.
485 B 2 b.		Inspection plan	Language has been modified to require the frequency of inspections in the inspection plan to be consistent with the self-inspection requirements under section 350.
485 B 4.		Unauthorized waste control plan	Language has been added to specifically list regulated medical waste as a waste to screen for. The citation referencing the unauthorized waste control program requirements has been corrected.
	485 B 5 e. 485 B 5 f.	Emergency contingency plan content requirements	This information was moved from section 340 to section 485 to consolidate all emergency contingency plan content requirements into a single location and remove duplicative language for ease of use. Section 340 requires emergency contingency plans to be implemented and Section 485 specifies the contents of the plan.
490.		Effect of the permit	Minor editorial corrections have been made.
530 C 3.		Recording and reporting required of a permittee	A clarification has been made to the regulation to state that the notification is required within five working days. Written submissions may be submitted either by mail or electronically. This provides the facility with more options by which to notify the department. In order to provide clarity to the regulated community, additional language has been added to the regulation to specify known types of noncompliance and unusual conditions that require reporting to the Department and may endanger health or the environment.
530 D.		Recording and reporting required of a permittee	The regulation is being amended to clarify that training records shall be maintained for 3 years. This is consistent with the retention schedule for permit records.
570.		Revocation or suspension of permits	Minor editorial corrections have been made.
600.		Modification of permits	Minor editorial corrections have been made.
620 B.		Asbestos-containing waste materials	Additional language has been added to clarify, that proper packaging of asbestos-containing waste materials includes adequate wetting, sealing in leak-tight containers or leak-tight

			packaging, and labeling in accordance with the federal regulations. These are not new regulatory requirements.
620 C 1.		Disposal of asbestos-containing waste materials	Additional language has been added to specify the pertinent requirements for receipt of asbestos-containing waste at a landfill.
	620 C 3. 620 C 4. 620 C 5.	Disposal of asbestos-containing waste materials	Additional language has been added to specify disposal requirements in order to prevent exposure and releases of asbestos into the air. Heavy equipment usage over uncovered Category I or Category II non-friable asbestos at the working face of a landfill is likely to render the asbestos friable, which supports the requirement to cover all types of asbestos waste immediately (rather than at the end of the working day) and in a manner that prevents it from becoming airborne. The clarified requirement is more protective of human health and consistent with standard industry best practice. Language was also added to clarify recordkeeping requirements consistent with minimum requirements in the federal regulations.
620 D.		Closure and post-closure care requirements for disposal of asbestos-containing materials	Minor editorial corrections have been made.
660 B.		Soil contaminated with petroleum products- testing requirements	A change have been made to require test results for extractable organic halides, which are more applicable to solids than the total organic halides, which were designed for water samples.
660 D.		Soil contaminated with petroleum products- disposal criteria	References to TOX have been changed to EOX to be consistent with the changes in B 1 of this section.

### Regulatory Flexibility Analysis

*Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) establishing less stringent compliance or reporting requirements; 2) establishing less stringent schedules or deadlines for compliance or reporting requirements; 3) consolidation or simplification of compliance or reporting requirements; 4) establishing performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the regulatory change.*

The regulatory amendment contains flexibility for active landfills that are permitted to receive 300 tons waste per day or less. These landfills will not be required to conduct an annual topographic survey, but instead will be required to conduct a survey once every two years. Landfills that are permitted to receive 300 tons of waste per day or less utilize disposal capacity at a slower rate and the less frequent topographic survey requirements provides smaller facilities with a less stringent schedule for complying with a regulatory requirement.

Flexibility has also been provided in the regulation to allow the department to evaluate alternate methods proposed by active industrial landfills to control fire, odor, litter, minimize stormwater infiltration, and prevent erosion and displacement of waste in lieu of weekly soil cover. This assists with accounting for the variability among the different natures, types, and quantities of wastes managed at active industrial landfills and minimizes adverse impact on any facilities that may be considered small businesses.

### Family Impact

*In accordance with § 2.2-606 of the Code of Virginia, please assess the potential impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

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This regulation does not impact the institution of the family or family stability.

Office of Regulatory Management  
Economic Review Form

<b>Agency name</b>	Virginia Waste Management Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC20-81
<b>VAC Chapter title(s)</b>	Solid Waste Management Regulations
<b>Action title</b>	Amendment 9
<b>Date this document prepared</b>	August 31, 2022

**Cost Benefit Analysis**

Table 1a must be completed for all actions. Tables 1b and 1c must be completed for actions (or portions thereof) where the agency is exercising discretion, including those where some of the changes are mandated by state or federal law or regulation. Tables 1b and 1c are not needed if **all** changes are mandated, and the agency is not exercising any discretion. In that case, enter a statement to that effect.

- (1) Direct Costs & Benefits: Identify all specific, direct economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (A direct impact is one that affects entities regulated by the agency and which directly results from the regulatory change itself, without any intervening steps or effects. For example, the direct impact of a regulatory fee change is the change in costs for these regulated entities.) When describing a particular economic impact, specify which new requirement or change in requirement creates the anticipated economic impact. Keep in mind that this is the proposed change versus the status quo. One bullet has been provided, add additional bullets as needed.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
  - (c) Enter the present value of the direct costs based on the worksheet.
  - (d) Enter the present value of the direct benefits based on the worksheet.
- (3) Benefits-Costs Ratio: Calculate d divided by c OR enter it from the worksheet.
- (4) Net Benefit: Calculate d minus c OR enter it from the worksheet.
- (5) Indirect Costs & Benefits: Identify all specific, indirect economic impacts (costs and/or benefits), anticipated to result from the regulatory change. (An indirect impact is one that results from responses to the regulatory change, but which are not directly required by the regulation. Indirect impacts of a regulatory fee change on regulated entities could include a change in the prices they charge, changes in their operating procedures or employment levels, or decisions to enter or exit the regulated profession or market. Indirect impacts also include responses by other entities that have close economic ties to the regulated entities, such as suppliers or partners.) If there are no indirect costs or benefits, include a specific statement to that effect.

- (6) Information Sources: Describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (7) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

**Table 1a: Costs and Benefits of the Proposed Changes (Primary Option)**

<p>(1) Direct Costs &amp; Benefits</p>	<p>Direct Costs</p> <p>Associated costs with the main elements of the proposed SWM regulation include the following:</p> <p><b><u>Landfill Siting</u></b>  The proposed regulation increases setback distance from the waste management boundary to the facility boundary from 50ft to 100ft, and increases the distance from the waste management boundary to any residence, school, daycare, hospital, nursing home or recreational park area in existence at the time of application is being increased from 200ft to 500ft.  Cost associated with the proposed setback requirements are variable and dependent on the existing facility and whether or not occupied buildings exist near the landfill in question. The Department is unable to estimate a cost associated with this requirement due to the variability of existing landfills.</p> <p><b><u>Operating Costs</u></b></p> <p><b><u>Topographic Survey</u></b>  The proposed regulation requires that landfills with permitted daily disposal limits of 300 tons per day or less will have to conduct a topographic survey once every 24 months. All other landfills will have to conduct a topographic survey every 12 months. Currently topographic surveys are generally required at the time of application. The cost of more frequent surveys is dependent on tons per day of permitted daily disposal limit, the size of the landfill, and the actual cost of the survey itself which could fluctuate by region and company used for the survey. A general cost range of topographic surveys is between \$5,000 and \$16,000.</p> <p><b><u>Daily Cover</u></b>  The cost associated with periodic cover is variable and depends on multiple factors including the size of the working face, the extent to which soil is removed and reused between lifts, the availability of soil onsite versus purchase or transport from an offsite location.</p>
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	<p>Because of these variables it is impossible to determine a cost associated with this requirement.</p> <p><b><u>Landfill Gas Monitoring</u></b> The proposed regulation includes a requirement for landfills to notify adjacent properties within 500ft of a gas compliance level exceedance, as well as offer offsite monitoring inside or in nearby offsite structures for elevated levels of methane after an exceedance is detected in the perimeter gas monitoring network. Due to variability associated with this requirement it is impossible to determine a cost associated with this requirement. However, little to no additional costs could be associated with this requirement, as monitoring of nearby offsite structures can be incorporated into current gas monitoring plan/costs.</p> <p><b><u>Landfill Groundwater Monitoring</u></b> The proposed regulation includes the potential addition of monitoring for PFAS/emerging contaminants of concern after VDH determines MCLs for these monitoring parameters. Cost estimates for PFAS sampling range from \$300 to \$700 per sample.</p> <p><b><u>Open Burning</u></b> The proposed regulation includes a prohibition of private citizens burning any other waste except for vegetative waste, clean wood, and clean paper products if there are no regularly scheduled waste collection services available in the area. The additional cost of this requirement would be negligible for private citizens.</p> <p><b><u>Closure/Financial Assurance</u></b> The proposed regulations include an additional requirement to incorporate the costs related to removal of stockpiled beneficial use materials. This cost is dependent on whether or not there are stockpiled beneficial use materials onsite at the landfill in question, the amount of the beneficial use materials, and the cost to dispose of the beneficial material offsite. Due to these variables, it is impossible to determine a cost associated with this requirement.</p> <p>No significant direct benefits were identified as a result of the proposed regulatory changes.</p>
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<p><sup>A</sup> (2) Quantitative Factors</p>	<p>Estimated Dollar Amount</p>	<p>Present Value</p>
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Direct Costs	(a) \$16,000 (Topo Survey, assume every year) \$700 per sample (Start dependent on promulgation of MCLs by VDH) Total: \$176,800	(c) Total Present Value: \$154,459.00	
Direct Benefits	(b) 0	(d) 0	
(3) Benefits-Costs Ratio	0.0	(4) Net Benefit	-154,459
(5) Indirect Costs & Benefits	No indirect costs and benefits were identified as a result of the proposed regulatory changes.		
(6) Information Sources	Topo Survey Cost- VA DPB EIA- 9VAC20-81 Solid Waste Management Regulations- Town Hall Action Stage- 12/9/21 PFAS Sampling Emails – Sampling cost estimates received from VDH staff via email		
(7) Optional			

**Table 1b: Costs and Benefits under the Status Quo (No change to the regulation)**

*This table addresses current requirements and the implications of not making any changes. In other words, describe the costs and benefits of maintaining the current regulatory requirements as is.*

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>• <b>Describe the current requirement associated with the first proposed impactful change described in Table 1a here.</b></li> </ul> <p>Direct Costs Associated costs with the main elements of the existing SWM regulation include the following:</p> <p><b><u>Permit</u></b> Current Permit application fees vary by the type of facility that is being permitted and what type of permit is required. A public comment period is also required and the cost of publication in a newspaper of local circulation is also associated with permit costs in the existing regulation. In addition an annual fee is also required which is based on tonnage of waste. Most permit applications also require the cost of a topographic survey at the time of application. Current cost of Part A Application Fee is \$4,180, and Part B Application Fee is \$18,680. Public Notice publication average</p>
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estimate is \$200. The average annual fee of existing SWM landfills in the Commonwealth is \$25,314. A topographic survey is generally required with an application and ranges in cost from \$5,000 to \$16,000. This cost estimate varies depending on landfill size and cost of conducting the actual survey may vary by company used.

**Landfill Siting**

The costs associated with landfill siting are completely facility dependent and cannot be estimated.

**Landfill Design**

The costs associated with landfill design are completely facility dependent and cannot be estimated.

**General Operating Costs**

Examples of operating costs include the cost of landfill equipment, staff and training. This cost is dependent on the size and complexity of the landfill and cannot be estimated with any certainty.

**Periodic Cover**

The cost associated with periodic cover is variable and depends on multiple factors including the size of the working face, the extent to which soil is removed and reused between lifts, the availability of soil onsite versus purchase or transport from an offsite location.

**Landfill Gas Monitoring**

Costs associated with this requirement include installation of a gas monitoring system if required, as well as the maintenance and operating costs of the system. This cost is dependent on the size and complexity of the monitoring system and cannot be estimated with any certainty.

**Leachate Collection and Monitoring and E&S Controls**

Costs associated with this requirement include cost of installation if necessary as well as maintenance and operational costs. These costs depend on the size and complexity of the landfill and cannot be estimated with any certainty.

**Groundwater Monitoring**

Costs associated with this requirement include installation of monitoring wells if necessary as well as ongoing maintenance and monitoring costs. Monitoring costs for constituents in Column A are estimated at \$250-\$300 per monitoring well using EPA Methods 8260, 6010, and 6020. Monitoring costs for Column B constituents

	<p>are estimated at \$850-\$1000 per monitoring well using EPA methods 8260, 8270, 6010, and 6020.</p> <p><b><u>Closure/Financial Assurance</u></b>            Cost of closure is dependent on size of the facility and planned post-closure end use of the property. The cost of closure can also depend on which financial instrument is used by the facility to demonstrate financial assurance. The instrument would also need to be adjusted annually for inflation. The average amount of financial assurance for SWM facilities in the Commonwealth is currently \$21,198,141.</p> <p>Direct Benefits:            No direct benefits were identified.</p>		
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(2) Quantitative Factors	Estimated Dollar Amount	Present Value	
Direct Costs	(a) \$4,180 (Part A Fee) \$18,680 (Part B Fee) \$25,314.03 (Average Annual Fee Based on Tonnage) \$200 (PN Publication Average Cost) \$16,000 (Topo survey at time of application) \$300 per well (Groundwater monitoring cost for Column A) Quarterly cost for 1 monitoring well: \$1,200.00 \$1000 per well (Groundwater monitoring cost for Column B) Quarterly cost for 1 monitoring well: \$4,000 \$21,198,141- (Average Financial Assurance of existing facilities) Total: \$21,542,341	(c) Total Present Value- 21,505,300	
Direct Benefits	(b) 0	(d) 0	
(3) Benefits-Costs Ratio	0	(4) Net Benefit	-21,505,300
(5) Indirect Costs & Benefits	N/A		

(6) Information Sources	Existing permit application fees, average cost of public notice publication, annual fees, financial assurance of existing permitted facilities Topo Survey Cost- VA DPB EIA- 9VAC20-81 Solid Waste Management Regulations- Town Hall Action Stage- 12/9/21 Monitoring Well Costs- Based on best professional judgement of DEQ groundwater staff, estimate is based on 1 monitoring well.
(7) Optional	

**Table 1c: Costs and Benefits under an Alternative Approach**

*This table addresses an alternative approach to accomplishing the objectives with different requirements. These alternative approaches may include the use of reasonably available alternatives in lieu of regulation, or information disclosure requirements or performance standards instead of regulatory mandates.*

(1) Direct Costs & Benefits	<ul style="list-style-type: none"> <li>There is no viable alternative. Alternatives to the regulation were explored by the Agency, however no viable alternatives were identified.</li> </ul>		
(2) Quantitative Factors	Estimated Dollar Amount	Present Value	
Direct Costs	(a)	(c)	
Direct Benefits	(b)	(d)	
(3) Benefits-Costs Ratio		(4) Net Benefit	
(5) Indirect Costs & Benefits			
(6) Information Sources			
(7) Optional			

**Impact on Local Partners**

- (1) Describe the direct costs and benefits (as defined on page 1) for local partners in terms of real monetary costs and FTEs. Local partners include local or tribal governments, school divisions, or other local or regional authorities, boards, or commissions. If local partners are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of total (overall) direct costs described above.
  - (b) Enter estimated dollar value of total (overall) direct benefits described above.
- (3) Indirect Costs & Benefits: Describe any indirect benefits and costs (as defined on page 1) for local partners that are associated with all significant changes. If there are no indirect costs or benefits, include a specific statement to that effect.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why they are not.
- (5) Assistance: Identify the amount and source of assistance provided for compliance in both funding and training or other technical implementation assistance.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 2: Impact on Local Partners**

(1) Direct Costs & Benefits	If localities own landfills they would be subject to the same potential costs associated with additional requirements in the proposed regulation as noted above.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Information Sources	
(5) Assistance	

(6) Optional	
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**Economic Impacts on Families**

- (1) Describe the direct costs and benefits (as defined on page 1) to a typical family of three (average family size in Virginia according to the U. S. Census) arising from any proposed regulatory changes that would affect the costs of food, energy, housing, transportation, healthcare, and education. If families are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe any indirect costs and benefits (as defined on page 1) to a typical family of three that are most likely to result from the proposed changes.
- (4) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (5) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 3: Impact on Families**

(1) Direct Costs & Benefits	No significant monetary impact is expected as a result of the proposed regulation on families living in the Commonwealth.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Information Sources	

(5) Optional	
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**Impacts on Small Businesses**

- (1) Describe the direct costs and benefits (as defined on page 1) for small businesses. For purposes of this analysis, “small business” means the same as that term is defined in § 2.2-4007.1. If small businesses are not affected, include a specific statement to that effect and a brief explanation of the rationale.
- (2) Quantitative Factors:
  - (a) Enter estimated dollar value of direct costs.
  - (b) Enter estimated dollar value of direct benefits.
- (3) Indirect Costs & Benefits: Describe the indirect benefits and costs (as defined on page 1) for small businesses that are most likely to result from the proposed changes.
- (4) Alternatives: Add a qualitative discussion of any equally effective alternatives that would make the regulatory burden on small business more equitable compared to other affected business sectors, and how those alternatives were identified.
- (5) Information Sources: describe the sources of information used to determine the benefits and costs, including the source of the Quantitative Factors. If dollar amounts are not available, indicate why not.
- (6) Optional: Use this space to add any further information regarding the data provided in this table, including calculations, qualitative assessments, etc.

Note: If any of the above information was included in Table 1, use the same information here.

**Table 4: Impact on Small Businesses**

(1) Direct Costs & Benefits	If small businesses own landfills they would be subject to the same potential costs associated with additional requirements in the proposed regulation as noted above.
(2) Quantitative Factors	Estimated Dollar Amount
Direct Costs	(a)
Direct Benefits	(b)
(3) Indirect Costs & Benefits	
(4) Alternatives	

(5) Information Sources	
(6) Optional	

**Changes to Number of Regulatory Requirements**

*For each individual VAC Chapter amended, repealed, or promulgated by this regulatory action, list (a) the initial requirement count, (b) the count of requirements that this regulatory package is adding, (c) the count of requirements that this regulatory package is reducing, (d) the net change in the number of requirements. This count should be based upon the text as written when this stage was presented for executive branch review. Five rows have been provided, add or delete rows as needed.*

**Table 5: Total Number of Requirements**

	Number of Requirements			
Chapter number	Initial Count	Additions	Subtractions	Net Change
9VAC20-81	8,624	8	0	+8

## COST BENEFIT ANALYSIS WORKSHEET

INTERIM v. July 28, 2022

Discount Rate:	3%	DO NOT CHANGE THIS NUMBER unless you wish to use a different
Time horizon:	10 years	

**Notes:**

1. Year 0 represents the current fiscal year
2. Options 1 & 2 below correspond to the two options in the grocery cart example. Option 3 below provides an
3. Replace the values in the green cells below with the expected costs and benefits for your analysis. Insert zero
4. The sections for options 2 and 3 must be filled out if the agency has any discretion over the proposed regulat

Year	Option 1		Option 2		Option 3	
	Cost	Benefit	Cost	Benefit	Cost	Benefit
0	16,000	0	21,267,715	0	0	0
1	16,000	0	30,514	0	0	0
2	16,000	0	30,514	0	0	0
3	16,000	0	30,514	0	0	0
4	18,800	0	30,514	0	0	0
5	18,800	0	30,514	0	0	0
6	18,800	0	30,514	0	0	0
7	18,800	0	30,514	0	0	0
8	18,800	0	30,514	0	0	0
9	18,800	0	30,514	0	0	0
<b>TOTAL</b>	176,800	0	21,542,341	0	0	0

<b>Present Value</b>						
Year	Option 1		Option 2		Option 3	
	Cost	Benefit	Cost	Benefit	Cost	Benefit
0	16,000	0	21,267,715	0	0	0
1	15,534	0	29,625	0	0	0
2	15,082	0	28,762	0	0	0
3	14,642	0	27,925	0	0	0
4	16,704	0	27,111	0	0	0
5	16,217	0	26,322	0	0	0
6	15,745	0	25,555	0	0	0
7	15,286	0	24,811	0	0	0
8	14,841	0	24,088	0	0	0
9	14,409	0	23,386	0	0	0
<b>TOTAL</b>	154,459	0	21,505,300	0	0	0

	Option 1	Option 2	Option 3
Benefit-Cost Ratio	0.00	0	#DIV/0!
Net Benefit	-154,459	-21,505,300	0

ent discount rate; if so, please make a note of this on the Economic Impact form and provide a rationale

example where costs and benefits vary from year to year.

0) for years where no costs or benefits are expected.

tory changes. Use "Option 2" for the status quo and "Option 3" for one other alternative.

## Project 6661 - Proposed

## Virginia Waste Management Board

## Amendment 9

**9VAC20-81-10. Definitions.**

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Accumulated speculatively" means to accumulate any material before being used, reused, or reclaimed or in anticipation of potential use, reuse, or reclamation. Materials are not being accumulated speculatively when they can be used, reused, or reclaimed, have a feasible means of use, reuse, or reclamation available and 75% of the materials accumulated are being removed from the facility annually.

"Active life" means the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities required by this chapter.

"Active portion" means that part of a facility or unit that has received or is receiving wastes and that has not been closed in accordance with this chapter.

"Agricultural waste" means all solid waste produced from farming operations.

"Airport" means, for the purpose of this chapter, a military airfield or a public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.

"Aquifer" means a geologic formation, group of formations, or a portion of a formation capable of yielding significant quantities of groundwater to wells or springs.

"Ash" means the fly ash or bottom ash residual waste material produced from incineration or burning of solid waste or from any fuel combustion.

"Base flood" see "Hundred-year flood."

"Bedrock" means the rock that underlies soil or other unconsolidated, superficial material at a site.

"Benchmark" means a permanent monument constructed of concrete and set in the ground surface below the ~~frostline~~ frost line with identifying information clearly affixed to it. Identifying information will include the designation of the benchmark as well as the elevation and coordinates on the local or Virginia state grid system, such as the Virginia State Plane North or Virginia State Plane South.

"Beneficial use" means a use that is of benefit as a substitute for natural or commercial products and does not contribute to adverse effects on health or environment.

"Beneficial use of CCR" means the CCR meet all of the following conditions:

1. The CCR must provide a functional benefit;
2. The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;
3. The use of the CCR must meet relevant product specifications, regulatory standards, or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and
4. When unencapsulated use of CCR involving placement on the land of 12,400 tons or more in nonroadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil, and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil, and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

"Bioremediation" means remediation of contaminated media by the manipulation of biological organisms to enhance the degradation of contaminants.

"Bird hazard" means an increase in the likelihood of ~~bird/aircraft~~ bird and aircraft collisions that may cause damage to the aircraft or injury to its occupants.

"Board" means the Virginia Waste Management Board.

"Bottom ash" means ash or slag that has been discharged from the bottom of the combustion unit after combustion.

"Capacity" means the maximum permitted volume of solid waste, inclusive of daily and intermediate cover, that can be disposed in a landfill. This volume is measured in cubic yards.

"Captive industrial landfill" means an industrial landfill that is located on property owned or controlled by the generator of the waste disposed of in that landfill.

"Captive waste management facility" means a solid waste management facility that is located on property owned or controlled by the generator of the waste being treated, stored, or disposed of at the facility. A captive industrial landfill is a type of captive waste management facility.

"CCR landfill" means an area of land or an excavation that receives CCR and that is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this chapter, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

"CCR surface impoundment" means a natural topographic depression, man-made excavation, or diked area that is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

[ "Certified Compostable Products" means any product specifically manufactured to break down in a compost system at the end of its useful life. Examples include containers, films, or foodservice ware such as bowls, plates, cups, cutlery, and bio-plastic liner bags. Products are composed of materials such as vegetable matter, paper, cardboard, and plastics and are certified as conforming to ASTM D6400 or ASTM D6868 standards, or equivalent. ]

"Clean wood" means solid waste consisting of untreated wood pieces and particles that do not contain paint, laminate, bonding agents, or chemical preservatives or are otherwise unadulterated.

"Closed facility" means a solid waste management facility that has been properly secured in accordance with the requirements of this chapter.

"Closure" means that point in time when a permitted landfill has been capped, certified as properly closed by a professional engineer, inspected by the department, and closure notification is performed by the department in accordance with 9VAC20-81-160 D E.

"Coal combustion byproducts" or "CCB" means residuals, including fly ash, bottom ash, boiler slag, and flue gas emission control waste produced by burning coal. CCB includes both CCR and other non-CCR wastes identified in this definition.

"Coal combustion residuals" or "CCR" means fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers. CCR is a specific type of CCB.

"Combustion unit" means an incinerator, waste heat recovery unit, or boiler.

"Commercial waste" means all solid waste generated by establishments engaged in business operations other than manufacturing or construction. This category includes, ~~but is not limited to,~~ solid waste resulting from the operation of stores, markets, office buildings, restaurants, and shopping centers.

"Compliance schedule" means a time schedule for measures to be employed on a solid waste management facility that will ultimately upgrade it to conform to this chapter.

~~"Compost" means a stabilized organic product produced by a controlled aerobic decomposition process in such a manner that the product can be handled, stored, or applied to the land without adversely affecting public health or the environment.~~ [ manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment, but may also contribute to plant nutrients. ]

"Composting" means the manipulation of the natural process of decomposition of organic materials to increase the rate of decomposition.

"Construction" means the initiation of permanent physical change at a property with the intent of establishing a solid waste management unit. This does not include land-clearing activities, excavation for borrow purposes, activities intended for infrastructure purposes, or activities necessary to obtain Part A siting approval (i.e., advancing of exploratory borings, digging of test pits, groundwater monitoring well installation, etc.).

"Construction/demolition/debris landfill" or "CDD landfill" means a land burial facility engineered, constructed and operated to contain and isolate construction waste, demolition waste, debris waste, split tires, and white goods or combinations of the above solid wastes.

"Construction waste" means solid waste that is produced or generated during construction, remodeling, or repair of pavements, houses, commercial buildings, and other structures. Construction wastes include; ~~but are not limited to~~ lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metal and plastics if the metal or plastics are a part of the materials of construction or empty containers for such materials. Paints, coatings, solvents, asbestos, any liquid, compressed gases or semi-liquids, and garbage are not construction wastes.

"Contaminated soil" means, for the purposes of this chapter, a soil that, as a result of a release or

human usage, has absorbed or adsorbed physical, chemical, or radiological substances at concentrations above those consistent with nearby undisturbed soil or natural earth materials.

"Container" means any portable device in which a material is stored, transported, treated, or otherwise handled and includes transport vehicles that are containers themselves (e.g., tank trucks) and containers placed on or in a transport vehicle.

"Containment structure" means a closed vessel such as a tank or cylinder.

"Convenience center" means a collection point for the temporary storage of solid waste provided for individual solid waste generators who choose to transport solid waste generated on their own premises to an established centralized point, rather than directly to a disposal facility. To be classified as a convenience center, the collection point may not receive waste from collection vehicles that have collected waste from more than one real property owner. A convenience center shall be on a system of regularly scheduled collections.

"Cover material" means compactable soil or other approved material that is used to blanket solid waste in a landfill.

"Daily disposal limit" means the amount of solid waste that is permitted to be disposed at the facility and shall be computed on the amount of waste disposed during any operating day.

"Debris waste" means wastes resulting from land-clearing operations. Debris wastes include, ~~but are not limited to~~ stumps, wood, brush, leaves, soil, and road spoils.

"Decomposed vegetative waste" means a stabilized organic product produced from vegetative waste by a controlled natural decay process in such a manner that the product can be handled, stored, or applied to the land without adversely affecting public health or the environment.

"Demolition waste" means that solid waste that is produced by the destruction of structures and their foundations and includes the same materials as construction wastes.

"Department" or "DEQ" means the Virginia Department of Environmental Quality.

"Director" means the Director of the Department of Environmental Quality. For purposes of submissions to the director as specified in the Waste Management Act, submissions may be made to the department.

"Discard" means to abandon, dispose of, burn, incinerate, accumulate, store, or treat before or instead of being abandoned, disposed of, burned, or incinerated.

"Discarded material" means a material that is:

1. Abandoned by being:
  - a. Disposed of;
  - b. Burned or incinerated; or
  - c. Accumulated, stored, or treated (but not used, reused, or reclaimed) before or in lieu of being abandoned by being disposed of, burned, or incinerated; or
2. Recycled used, reused, or reclaimed material as defined in this part.

"Disclosure statement" means a sworn statement or affirmation as required by § 10.1-1400 of the Code of Virginia (see DEQ Form DISC-01 and 02 (Disclosure Statement)).

"Displacement" means the relative movement of any two sides of a fault measured in any direction.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that such solid waste or any constituent of it may enter the environment or be emitted into the air or discharged into any waters.

"Disposal unit boundary" or "DUB" means the vertical plane located at the edge of the waste disposal unit. This vertical plane extends down into the uppermost aquifer. The DUB must be positioned within or coincident to the waste management boundary.

"EPA" means the U.S. Environmental Protection Agency.

"Exempt management facility" means a site used for activities that are conditionally exempt from management as a solid waste under this chapter. The facility remains exempt from solid waste management requirements provided it complies with the applicable conditions set forth in Parts II (9VAC20-81-20 et seq.) and IV (9VAC20-81-300 et seq.) of this chapter.

"Existing CCR landfill" means a CCR landfill that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015, and receives CCR on or after October 19, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite, physical construction program had begun prior to October 19, 2015.

"Existing CCR surface impoundment" means a CCR surface impoundment that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015, and receives CCR on or after October 19, 2015. A CCR surface impoundment has commenced construction if

the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite, physical construction program had begun prior to October 19, 2015.

"Expansion" means a horizontal expansion of the waste management boundary as identified in the Part A application. If a facility's permit was issued prior to the establishment of the Part A process, an expansion is a horizontal expansion of the disposal unit boundary.

"Facility" means solid waste management facility unless the context clearly indicates otherwise.

"Facility boundary" means the boundary of the solid waste management facility. For landfills, this boundary encompasses the waste management boundary and all ancillary activities including, ~~but not limited to~~ scales, groundwater monitoring wells, gas monitoring probes, and maintenance facilities as identified in the facility's permit application. For facilities with a permit-by-rule (PBR) the facility boundary is the boundary of the property where the permit-by-rule activity occurs. For unpermitted solid waste management facilities, the facility boundary is the boundary of the property line where the solid waste is located.

"Facility structure" means any building, shed, or utility or drainage line on the facility.

"Fault" means a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

"Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including low-lying areas of offshore islands where flooding occurs.

"Fly ash" means ash particulate collected from air pollution attenuation devices on combustion units.

"Food-chain crops" means crops grown for human consumption, tobacco, and crops grown for pasture and forage or feed for animals whose products are consumed by humans.

"Fossil fuel combustion products" means coal combustion byproducts as defined in this regulation, coal combustion byproducts generated at facilities with fluidized bed combustion technology, petroleum coke combustion byproducts, byproducts from the combustion of oil, byproducts from the combustion of natural gas, and byproducts from the combustion of mixtures of coal and "other fuels" (i.e., co-burning of coal with "other fuels" where coal is at least 50% of the total fuel). For purposes of this definition, "other fuels" means waste-derived fuel product, auto shredder fluff, wood wastes, coal mill rejects, peat, tall oil, tire-derived fuel, deionizer resins, and used oil.

"Free liquids" means liquids that readily separate from the solid portion of a waste under ambient temperature and pressure as determined by the Paint Filter Liquids Test, Method 9095, U.S. Environmental Protection Agency, Publication SW-846.

"Garbage" means readily putrescible discarded materials composed of animal, vegetable, or other organic matter.

"Gas condensate" means the liquid generated as a result of gas control or recovery processes at the solid waste management facility.

"Governmental unit" means any department, institution, or commission of the Commonwealth and any public corporate instrumentality thereof, and any district, and shall include local governments.

"Ground rubber" means material processed from waste tires that is no larger than 1/4 inch in any dimension. This includes crumb rubber that is measured in mesh sizes.

"Groundwater" means water below the land surface in a zone of saturation.

"Hazardous constituent" means a constituent of solid waste found listed in Appendix VIII of 9VAC20-60-261.

"Hazardous waste" means a "hazardous waste" as described by the Virginia Hazardous Waste Management Regulations (9VAC20-60).

"Holocene" means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.

~~"Home use" means the use of compost for growing plants that is produced and used on a privately owned residential site.~~

"Host agreement" means any lease, contract, agreement, or land use permit entered into or issued by the locality in which the landfill is situated that includes terms or conditions governing the operation of the landfill.

"Household hazardous waste" means any waste material derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas) ~~which that~~, except for the fact that it is derived from a household, would otherwise be classified as a hazardous waste in accordance with 9VAC20-60.

"Household waste" means any waste material, including garbage, trash, and refuse, derived from households. Households include single and multiple residences, hotels and motels, bunkhouses, ranger

stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. Household wastes do not include sanitary waste in septic tanks (septage) that is regulated by other state agencies.

"Hundred-year flood" means a flood that has a 1.0% or greater chance of recurring in any given year or a flood of magnitude equaled or exceeded on the average only once in a hundred years on the average over a significantly long period.

"Inactive CCR surface impoundment" means a CCR surface impoundment that no longer receives CCR on or after October 19, 2015, and still contains both CCR and liquids on or after October 19, 2015.

"Incineration" means the controlled combustion of solid waste for disposal.

"Incinerator" means a facility or device designed for the treatment of solid waste by combustion.

"Industrial waste" means any solid waste generated by manufacturing or industrial process that is not a regulated hazardous waste. Such waste may include, ~~but is not limited to,~~ waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/byproducts; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

"Industrial waste landfill" means a solid waste landfill used primarily for the disposal of a specific industrial waste or a waste that is a byproduct of a production process.

"Injection well" means, for the purposes of this chapter, a well or bore hole into which fluids are injected into selected geological horizons.

"Institutional waste" or "institutional solid waste" means all solid waste emanating from institutions such as, but not limited to, hospitals, nursing homes, orphanages, and public or private schools. It can include regulated medical waste from health care facilities and research facilities that must be managed as a regulated medical waste.

"Interim cover systems" means temporary cover systems applied to a landfill area when landfilling operations will be temporarily suspended for an extended period (typically, longer than one year). At the conclusion of the interim period, the interim cover system may be removed and landfilling operations resume or final cover is installed.

"Karst topography" means areas where karst terrane, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terranes include, ~~but are not limited to,~~ sinkholes, sinking streams, caves, large springs, and blind valleys.

"Key personnel" means the applicant itself and any person employed by the applicant in a managerial capacity, or empowered to make discretionary decisions, with respect to the solid waste or hazardous waste operations of the applicant in Virginia, but shall not include employees exclusively engaged in the physical or mechanical collection, transportation, treatment, storage, or disposal of solid or hazardous waste and such other employees as the director may designate by regulation. If the applicant has not previously conducted solid waste or hazardous waste operations in Virginia, the term also includes any officer, director, partner of the applicant, or any holder of 5.0% or more of the equity or debt of the applicant. If any holder of 5.0% or more of the equity or debt of the applicant or of any key personnel is not a natural person, the term includes all key personnel of that entity, provided that where such entity is a chartered lending institution or a reporting company under the Federal Security and Exchange Act of 1934, the term does not include key personnel of such entity. Provided further that the term means the chief executive officer of any agency of the United States or of any agency or political subdivision of the Commonwealth, and all key personnel of any person, other than a natural person, that operates a landfill or other facility for the disposal, treatment, or storage of nonhazardous solid waste under contract with or for one of those governmental entities.

"Lagoon" means a body of water or surface impoundment designed to manage or treat waste water.

"Land-clearing activities" means the removal of flora from a parcel of land.

"Land-clearing debris" means vegetative waste resulting from land-clearing activities.

"Landfill" means a sanitary landfill, an industrial waste landfill, or a construction/demolition/debris landfill.

"Landfill gas" means gas generated as a byproduct of the decomposition of organic materials in a landfill. Landfill gas consists primarily of methane and carbon dioxide.

"Landfill mining" means the process of excavating solid waste from an existing landfill but does not include excavation of waste to facilitate [ correction of overfills, ] installation of landfill gas, leachate management, or other utility systems provided waste excavated is managed and cover installed in accordance with 9VAC20-81-140 or 9VAC20-81-160, as applicable.

"Leachate" means a liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials from such waste. Leachate and any material with which it is mixed is solid waste; except that leachate that is pumped from a collection tank for transportation to disposal in an offsite facility is regulated as septage, leachate discharged into a waste water collection system is regulated as industrial waste water and leachate that has contaminated groundwater is regulated as contaminated groundwater.

"Lead acid battery" means, for the purposes of this chapter, any wet cell battery.

"Lift" means the daily landfill layer of compacted solid waste plus the cover material.

"Liquid waste" means any waste material that is determined to contain "free liquids" as defined by this chapter.

"Lithified earth material" means all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock, that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth's surface.

"Litter" means, for purposes of this chapter, any solid waste that is discarded or scattered about a solid waste management facility outside the immediate working area.

"Lower explosive limit" means the lowest concentration by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and at atmospheric pressure.

"Materials recovery facility" means a solid waste management facility for the collection, processing, and recovery of material such as metals from solid waste or for the production of a fuel from solid waste. This does not include the production of a waste-derived fuel product.

"Maximum horizontal acceleration in lithified earth material" means the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90% or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

"Monitoring" means all methods, procedures, and techniques used to systematically analyze, inspect, and collect data on operational parameters of the facility or on the quality of air, groundwater, surface water, and soils.

"Monitoring well" means a well point below the ground surface for the purpose of obtaining periodic water samples from groundwater for quantitative and qualitative analysis.

"Mulch" means woody waste consisting of stumps, trees, limbs, branches, bark, leaves and other clean wood waste that has undergone size reduction by grinding, shredding, or chipping, and is distributed to the general public for landscaping purposes or other horticultural uses except composting as defined and regulated under this chapter.

"Municipal solid waste" means that waste that is normally composed of residential, commercial, and institutional solid waste and residues derived from combustion of these wastes.

"New CCR landfill" means a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 19, 2015. A new CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite, physical construction program had begun after October 19, 2015. Overfills are also considered new CCR landfills.

"New CCR surface impoundment" means a CCR surface impoundment or lateral expansion of an existing or new CCR surface impoundment that first receives CCR or commences construction after October 19, 2015. A new CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous onsite, physical construction program had begun after October 19, 2015.

"New solid waste management facility" means a facility or a portion of a facility that was not included in a previous determination of site suitability (Part A approval).

"Nuisance" means an activity that unreasonably interferes with an individual's or the public's comfort, convenience or enjoyment such that it interferes with the rights of others by causing damage, annoyance, or inconvenience.

"Offsite" means any site that does not meet the definition of onsite as defined in this part.

"Onsite" means the same or geographically contiguous property, which may be divided by public or private right-of-way, provided the entrance and exit to the facility are controlled by the owner or the operator of the facility. Noncontiguous properties owned by the same person, but connected by a right-of-way that he controls and to which the public does not have access, are also considered onsite property.

"Open burning" means the combustion of solid waste without:

1. Control of combustion air to maintain adequate temperature for efficient combustion;

2. Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion; and

3. Control of the combustion products' emission.

"Open dump" means a site on which any solid waste is placed, discharged, deposited, injected, dumped, or spilled so as to present a threat of a release of harmful substances into the environment or present a hazard to human health. Such a site is subject to the Open Dump Criteria in 9VAC20-81-45.

"Operating record" means records required to be maintained in accordance with the facility permit or this part (see 9VAC20-81-530).

"Operation" means all waste management activities at a solid waste management facility beginning with the initial receipt of solid waste for treatment, storage, disposal, or transfer and ceasing with the initiation of final closure activities at the solid waste management facility subsequent to the final receipt of waste.

"Operator" means the person responsible for the overall operation and site management of a solid waste management facility.

"Owner" means the person who owns a solid waste management facility or part of a solid waste management facility.

"PCB" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances that contain such substance (see 40 CFR 761.3, as amended).

"Perennial stream" means a well-defined channel that contains water year round during a year of normal rainfall. Generally, the water table is located above the streambed for most of the year and groundwater is the primary source for stream flow. A perennial stream exhibits the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water.

"Permit" means the written permission of the director to own, operate, or construct a solid waste management facility.

"Person" means an individual, corporation, partnership, association, a governmental body, a municipal corporation, or any other legal entity.

"Point source" means any discernible, confined, and discrete conveyance, including ~~but not limited to~~ any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel, or other floating craft, from which pollutants are or may be discharged. Return flows from irrigated agriculture are not included.

"Pollutant" means any substance that causes or contributes to, or may cause or contribute to, environmental degradation when discharged into the environment.

"Poor foundation conditions" means those areas where features exist that indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a solid waste management facility.

~~"Post-closure"~~ "Post-closure" means the requirements placed upon solid waste disposal facilities after closure to ensure environmental and public health safety for a specified number of years after closure.

"Process rate" means the maximum rate of waste acceptance that a solid waste management facility can process for treatment and storage. This rate is limited by the capabilities of equipment, personnel, and infrastructure.

"Processing" means preparation, treatment, or conversion of waste by a series of actions, changes, or functions that bring about a desired end result.

"Professional engineer" means an engineer licensed to practice engineering in the Commonwealth as defined by the rules and regulations set forth by the Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (18VAC10-20).

"Professional geologist" means a geologist licensed to practice geology in the Commonwealth as defined by the rules and regulations set forth by the Board for Professional Soil Scientists, Wetland Professionals, and Geologists (18VAC145-40).

"Progressive cover" means cover material placed over the working face of a solid waste disposal facility advancing over the deposited waste as new wastes are added keeping the exposed area to a minimum.

"Putrescible waste" means solid waste that contains organic material capable of being decomposed by ~~micro-organisms~~ microorganisms and cause odors.

"Qualified groundwater scientist" means a scientist or engineer who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by professional certifications or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective action.

"RCRA" means the Solid Waste Disposal Act, as amended by the Resource Conservation and

Recovery Act of 1976 (42 USC § 6901 et seq.), the Hazardous and Solid Waste Amendments of 1984, and any other applicable amendments to these laws.

"Reclaimed material" means a material that is processed or reprocessed to recover a usable product or is regenerated to a usable form.

"Refuse" means all solid waste products having the character of solids rather than liquids and that are composed wholly or partially of materials such as garbage, trash, rubbish, litter, residues from clean up of spills or contamination, or other discarded materials.

"Refuse-derived fuel (RDF)" means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including low-density fluff refuse-derived fuel through densified refuse-derived fuel and pelletized refuse-derived fuel.

"Regulated hazardous waste" means a solid waste that is a hazardous waste, as defined in the Virginia Hazardous Waste Management Regulations (9VAC20-60), that is not excluded from those regulations as a hazardous waste.

"Regulated medical waste" means solid wastes so defined by the Regulated Medical Waste Management Regulations (9VAC20-120) as promulgated by the Virginia Waste Management Board.

"Release" means, for the purpose of this chapter, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, dumping, or disposing into the environment solid wastes or hazardous constituents of solid wastes (including the abandonment or discarding of barrels, containers, and other closed receptacles containing solid waste). This definition does not include any release that results in exposure to persons solely within a workplace; release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 (68 Stat. 923); and the normal application of fertilizer. For the purpose of this chapter, release also means substantial threat of release.

"Remediation waste" means all solid waste, including all media (groundwater, surface water, soils, and sediments) and debris, that are managed for the purpose of remediating a site in accordance with 9VAC20-81-45 or Part III (9VAC20-81-100 et seq.) of this chapter or under the Voluntary Remediation Regulations (9VAC20-160) or other regulated remediation program under DEQ oversight. For a given facility, remediation wastes may originate only from within the boundary of that facility, and may include wastes managed as a result of remediation beyond the boundary of the facility. Hazardous wastes as defined in 9VAC20-60, as well as "new" or "as generated" wastes, are excluded from this definition.

"Remediation waste management unit" or "RWMU" means an area within a facility that is designated by the director for the purpose of implementing remedial activities required under this chapter or otherwise approved by the director. An RWMU shall only be used for the management of remediation wastes pursuant to implementing such remedial activities at the facility.

"Responsible official" means one of the following:

1. For a business entity, such as a corporation, association, limited liability company, or cooperative: a duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more operating facilities applying for or subject to a permit. The authority to sign documents must be assigned or delegated to such representative in accordance with procedures of the business entity;
2. For a partnership or sole proprietorship: a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: a duly authorized representative of the locality if the representative is responsible for the overall operation of one or more operating facilities applying for or subject to a permit. The authority to sign documents must be assigned or delegated to such representative in accordance with procedures of the locality.

"Rubbish" means combustible or slowly putrescible discarded materials that include ~~but are not limited to~~ trees, wood, leaves, trimmings from shrubs or trees, printed matter, plastic and paper products, grass, rags, and other combustible or slowly putrescible materials not included under the term "garbage."

"Runoff" means any rainwater, leachate, or other liquid that drains over land from any part of a solid waste management facility.

"Run-on" means any rainwater, wastewater, leachate, or other liquid that drains over land onto any part of the solid waste management facility.

"Salvage" means the authorized, controlled removal of waste materials from a solid waste management facility.

"Sanitary landfill" means an engineered land burial facility for the disposal of household waste that is so located, designed, constructed, and operated to contain and isolate the waste so that it does not pose a substantial present or potential hazard to human health or the environment. A sanitary landfill also may receive other types of solid wastes, such as commercial solid waste, nonhazardous sludge, hazardous

waste from very small quantity generators, construction demolition debris, and nonhazardous industrial solid waste.

"Saturated zone" means that part of the earth's crust in which all voids are filled with water.

"Scavenging" means the unauthorized or uncontrolled removal of waste materials from a solid waste management facility.

"Scrap metal" means metal parts such as bars, rods, wire, empty containers, or metal pieces that are discarded material and can be used, reused, or reclaimed.

"Secondary containment" means an enclosure into which a container or tank is placed for the purpose of preventing discharge of wastes to the environment.

"Seismic impact zone" means an area with a 10% or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10g in 250 years.

"Semiannual" ~~"Semi-annual"~~ means an interval corresponding to approximately 180 days. For the purposes of scheduling monitoring activities, sampling within 30 days of the 180-day interval will be considered ~~semiannual~~. semi-annual.

"Site" means all land and structures, infrastructure, other appurtenances, and improvements on them used for treating, storing, and disposing of solid waste. This term includes adjacent land within the facility boundary used for the utility systems such as repair, storage, shipping or processing areas, or other areas incident to the management of solid waste.

"Sludge" means any solid, semi-solid or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of treated effluent from a wastewater treatment plant.

"Small landfill" means a landfill that disposed of 100 tons/day or less of solid waste during a representative period prior to October 9, 1993, and did not dispose of more than an average of 100 tons/day of solid waste each month between October 9, 1993, and April 9, 1994.

"Solid waste" means any of those materials defined as "solid waste" in 9VAC20-81-95.

"Solid waste disposal facility" means a solid waste management facility at which solid waste will remain after closure.

"Solid waste management facility" or "SWMF" means a site used for planned treating, storing, or disposing of solid waste. A facility may consist of several treatment, storage, or disposal units.

"Special wastes" means solid wastes that are difficult to handle, require special precautions because of hazardous properties, or the nature of the waste creates waste management problems in normal operations. (See Part VI (9VAC20-81-610 et seq.) of this chapter.)

~~"Speculatively accumulated material" means any material that is accumulated before being used, reused, or reclaimed or in anticipation of potential use, reuse, or reclamation. Materials are not being accumulated speculatively when they can be used, reused, or reclaimed, have a feasible means of use, reuse, or reclamation available and 75% of the materials accumulated are being removed from the facility annually.~~

"State waters" means all water, on the surface and under the ground, wholly or partially within, or bordering the Commonwealth, or within its jurisdiction.

"Storage" means the holding of waste, at the end of which the waste is treated, disposed, or stored elsewhere.

"Structural fill" means an engineered fill with a projected beneficial end use, constructed using soil or fossil fuel combustion products, when done in accordance with this chapter, spread and compacted with proper equipment, and covered with a vegetated soil cap.

"Sudden event" means a one-time, single event such as a sudden collapse or a sudden, quick release of contaminants to the environment. An example would be the sudden loss of leachate from an impoundment into a surface stream caused by failure of a containment structure.

"Surface impoundment" or "impoundment" means a facility or part of a facility that is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and that is not an injection well.

"Surface waters" means all state waters that are not groundwater as defined in § 62.1-255 of the Code of Virginia.

"SW-846" means Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Second Edition, 1982 as amended by Update I (April, 1984), and Update II (April, 1985) and the third edition, November, 1986, as amended.

"Tank" means a stationary device, designed to contain an accumulation of liquid or semi-liquid

components of solid waste that is constructed primarily of nonearthen materials that provide structural support.

"TEF" or "Toxicity Equivalency Factor" means a factor developed to account for different toxicities of structural isomers of polychlorinated dibenzodioxins and dibenzofurans and to relate them to the toxicity of 2,3,7,8-tetrachloro dibenzo-p-dioxin.

"Terminal" means the location of transportation facilities such as classification yards, docks, airports, management offices, storage sheds, and freight or passenger stations, where solid waste that is being transported may be loaded, unloaded, transferred, or temporarily stored.

"Thermal treatment" means the treatment of solid waste in a device that uses elevated temperature as the primary means to change the chemical, physical, or biological character, or composition of the solid waste.

"Tire chip" means a material processed from waste tires that is a nominal two square inches in size, and ranges from 1/4 inch to four inches in any dimension. Tire chips contain no wire protruding more than 1/4 inch.

"Tire shred" means a material processed from waste tires that is a nominal 40 square inches in size, and ranges from four inches to 10 inches in any dimension.

"Transfer station" means any solid waste storage or collection facility at which solid waste is transferred from collection vehicles to haulage vehicles for transportation to a central solid waste management facility for disposal, incineration, or resource recovery.

"Trash" means combustible and noncombustible discarded materials and is used interchangeably with the term rubbish.

"Treatment" means, for the purpose of this chapter, any method, technique, or process, including but not limited to incineration, designed to change the physical, chemical, or biological character or composition of any waste to render it more stable, safer for transport, or more amenable to use, reuse, reclamation, recovery, or disposal.

"Underground source of drinking water" means an aquifer or its portion:

1. Which contains water suitable for human consumption; or
2. In which the groundwater contains less than 10,000 mg/liter total dissolved solids.

"Unit" means a discrete area of land used for the disposal of solid waste.

"Unstable area" means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terranes.

"Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as, lower aquifers that are hydraulically interconnected with this aquifer within the facility boundary.

"Used or reused material" means a material that is either:

1. Employed as an ingredient (including use as an intermediate) in a process to make a product, excepting those materials possessing distinct components that are recovered as separate end products; or
2. Employed in a particular function or application as an effective substitute for a commercial product or natural resources.

"Vector" means a living animal, insect, or other arthropod that transmits an infectious disease from one organism to another.

"Vegetative waste" means decomposable materials generated by yard and lawn care or land-clearing activities and includes, ~~but is not limited to,~~ leaves, grass trimmings, woody wastes such as shrub and tree prunings, bark, limbs, roots, and stumps.

"Vermicomposting" means the controlled and managed process by which live worms convert organic residues into fertile excrement.

"Vertical design capacity" means the maximum design final elevation specified in the facility's permit or if none is specified in the permit, the maximum elevation based on a 3:1 slope from the waste disposal unit boundary.

"Very small quantity generator" means a generator of hazardous waste as defined in 40 CFR 260.10 as incorporated by reference in 9VAC20-60-260 that generates less than or equal to the following amounts in a calendar month: (i) 100 kilograms of nonacute hazardous waste; (ii) one kilogram of acute hazardous waste; and (iii) 100 kilograms of any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill into or on any land or water of acute hazardous waste.

"VPDES" (Virginia Pollutant Discharge Elimination System) means the Virginia system for the issuance

of permits pursuant to the Permit Regulation (9VAC25-31), the State Water Control Law (§ 62.1-44.2 et seq. of the Code of Virginia), and § 402 of the Clean Water Act (33 USC § 1251 et seq.).

~~"Washout" means carrying away of solid waste by waters of the base flood.~~

"Waste-derived fuel product" means a solid waste or combination of solid wastes that have been treated (altered physically, chemically, or biologically) to produce a fuel product with a minimum heating value of 5,000 BTU/lb. Solid wastes used to produce a waste-derived fuel product must have a heating value, or act as binders, and may not be added to the fuel for the purpose of disposal. Waste ingredients may not be listed or characteristic hazardous wastes. The fuel product must be stable at ambient temperature, and not degraded by exposure to the elements. This material may not be "refuse derived fuel (RDF)" as defined in 9VAC5-40-890.

"Waste management boundary" means the vertical plane located at the boundary line of the area approved in the Part A application for the disposal of solid waste and storage of leachate. This vertical plane extends down into the uppermost aquifer and is within the facility boundary.

"Waste pile" means any noncontainerized accumulation of nonflowing, solid waste that is used for treatment or storage.

"Waste tire" means a tire that has been discarded because it is no longer suitable for its original intended purpose because of wear, damage or defect. (See 9VAC20-150 for other definitions dealing with the waste tire program.)

"Wastewaters" means, for the purpose of this chapter, wastes that contain less than 1.0% by weight total organic carbon (TOC) and less than 1.0% by weight total suspended solids (TSS).

"Water pollution" means such alteration of the physical, chemical, or biological properties of any state water as will or is likely to create a nuisance or render such waters:

1. Harmful or detrimental or injurious to the public health, safety, or welfare, or to the health of animals, fish, or aquatic life or plants;
2. Unsuitable, with reasonable treatment, for use as present or possible future sources of public water supply; or
3. Unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that:
  - a. An alteration of the physical, chemical, or biological properties of state waters or a discharge or deposit of sewage, industrial wastes, or other wastes to state waters by any owner that by itself is not sufficient to cause pollution but which in combination with such alteration or discharge or deposit to state waters by other persons is sufficient to cause pollution;
  - b. The discharge of untreated sewage by any person into state waters; and
  - c. The contribution to the degradation of water quality standards duly established by the State Water Control Board, are "pollution" for the terms and purposes of this chapter.

"Water table" means the upper surface of the zone of saturation in groundwaters in which the hydrostatic pressure is equal to the atmospheric pressure.

"Waters of the United States" or "waters of the U.S." means:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate "wetlands";
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including:
  - a. Any such waters that are or could be used by interstate or foreign travelers for recreational or other purposes;
  - b. Any such waters from which fish or shellfish are or could be taken and sold in interstate or foreign commerce;
  - c. Any such waters that are used or could be used for industrial purposes by industries in interstate commerce;
  - d. All impoundments of waters otherwise defined as waters of the United States under this definition;
  - e. Tributaries of waters identified in subdivisions 3 a through 3 d of this definition;
  - f. The territorial sea; and
  - g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subdivisions 3 a through 3 f of this definition.

"Wetlands" means those areas that are defined by the federal regulations under 33 CFR Part 328, as amended.

"White goods" means any stoves, washers, hot water heaters, and other large appliances.

"Working face" means that area within a landfill that is actively receiving solid waste for compaction and cover.

"Yard waste" means a subset of vegetative waste and means decomposable waste materials generated by yard and lawn care and includes leaves, grass trimmings, brush, wood chips, and shrub and tree trimmings. Yard waste shall not include roots or stumps that exceed 12 inches in diameter.

## Part II

### General Information

#### **9VAC20-81-25. Purpose of chapter.**

A. The purpose of this chapter is to establish standards and procedures pertaining to the management of solid wastes by providing the requirements for siting, design, construction, operation, maintenance, closure, and ~~postclosure~~ post-closure care of solid waste management facilities in the Commonwealth in order to protect the public health, public safety the environment, and our natural resources.

B. This chapter provides for the prohibition of open dumping of solid waste to protect public health and safety and the environment.

C. This chapter sets forth the requirements for undertaking corrective actions at solid waste management facilities.

#### **9VAC20-81-35. Applicability of chapter.**

A. This chapter applies to all persons who treat, store, dispose, or otherwise manage solid wastes as defined in 9VAC20-81-95.

~~B. All facilities that were permitted prior to March 15, 1993, and upon which solid waste has been disposed of prior to October 9, 1993, may continue to receive solid waste until they have reached their vertical design capacity or until the closure date established pursuant to § 10.1-1413.2 of the Code of Virginia, in Table 2.1 provided:~~

~~1. The facility is in compliance with the requirements for liners and leachate control in effect at the time of permit issuance.~~

~~2. On or before October 9, 1993, the owner or operator of the solid waste management facility submitted to the director:~~

~~a. An acknowledgment that the owner or operator is familiar with state and federal law and regulations pertaining to solid waste management facilities operating after October 9, 1993, including postclosure care, corrective action, and financial responsibility requirements;~~

~~b. A statement signed by a professional engineer that he has reviewed the regulations established by the department for solid waste management facilities, including the open dump criteria contained therein, that he has inspected the facility and examined the monitoring data compiled for the facility in accordance with applicable regulations and that, on the basis of his inspection and review, he has concluded:~~

~~(1) That the facility is not an open dump;~~

~~(2) That the facility does not pose a substantial present or potential hazard to human health and the environment; and~~

~~(3) That the leachate or residues from the facility do not pose a threat of contamination or pollution of the air, surface water, or groundwater in a manner constituting an open dump or resulting in a substantial present or potential hazard to human health or the environment; and~~

~~c. A statement signed by the owner or operator:~~

~~(1) That the facility complies with applicable financial assurance regulations; and~~

~~(2) Estimating when the facility will reach its vertical design capacity.~~

~~3. Enlargement or closure of these facilities shall conform with the following subconditions:~~

~~a. The facility may not be enlarged prematurely to avoid compliance with this chapter when such enlargement is not consistent with past operating practices, the permit, or modified operating practices to ensure good management.~~

~~b. The facility shall not dispose of solid waste in any portion of a landfill disposal area that has received final cover or has not received waste for a period of one year, in accordance with 9VAC20-81-160 C. The facility shall notify the department, in writing, within 30 days, when an~~

area has received final cover or has not received waste for a one-year period, in accordance with 9VAC20-81-160 C. However, a facility may apply for a permit, and if approved, can construct and operate a new cell that overlays ("piggybacks") over a closed area in accordance with the permit requirements of this chapter.

e. The facilities subject to the restrictions in this subsection are listed in Table 2.1. The closure dates were established in Final Prioritization and Closure Schedule for HB 1205 Disposal Areas (DEQ, September 2001). The publication of these tables is for the convenience of the regulated community and does not change established dates. Any facility, including, but not limited to those listed in Table 2.1, must cease operation if that facility meets any of the open dump criteria listed in 9VAC20-81-45 A 1.

d. Those facilities assigned a closure date in accordance with § 10.1-1413.2 of the Code of Virginia shall designate on a map, plat, diagram, or other engineered drawing, areas in which waste will be disposed of in accordance with Table 2.1 until the latest cessation of waste acceptance date as listed in Table 2.1 is achieved. This map or plat shall be placed in the operating record and a copy shall be submitted upon request to the department in order to track the progress of closure of these facilities. If the facility already has provided this information under 9VAC20-81-160, then the facility may refer to that information.

TABLE 2.1  
Final Prioritization and Closure Schedule For House Bill (HB) 1205 Dis

Solid Waste Permit Number and Site Name	Location	Department Regional Office
429—Fluvanna County Sanitary Landfill	Fluvanna County	VRO
92—Halifax County Sanitary Landfill <sup>3</sup>	Halifax County	BRR0
49—Martinsville Landfill	City of Martinsville	BRR0
14—Mecklenburg County Landfill	Mecklenburg County	BRR0
228—Petersburg City Landfill <sup>3</sup>	City of Petersburg	PRO
31—South Boston Sanitary Landfill	Town of South Boston	BRR0
204—Waynesboro City Landfill	City of Waynesboro	VRO
91—Accomack County Landfill—Bobtown South	Accomack County	TRO
580—Bethel Landfill <sup>3</sup>	City of Hampton	TRO
182—Caroline County Landfill	Caroline County	NVRO
149—Fauquier County Landfill	Fauquier County	NVRO
405—Greensville County Landfill	Greensville County	PRO
29—Independent Hill Landfill <sup>3</sup>	Prince William County	NVRO
1—Loudoun County Sanitary Landfill	Loudoun County	NVRO
194—Louisa County Sanitary Landfill	Louisa County	NVRO
227—Lunenburg County Sanitary Landfill	Lunenburg County	BRR0
507—Northampton County Landfill	Northampton County	TRO
90—Orange County Landfill	Orange County	NVRO
75—Rockbridge County Sanitary Landfill	Rockbridge County	VRO
23—Scott County Landfill	Scott County	SWRO
587—Shoosmith Sanitary Landfill <sup>3</sup>	Chesterfield County	PRO
417—Southeastern Public Service Authority Landfill <sup>3</sup>	City of Suffolk	TRO

<del>461—Accomack County Landfill #2</del>	<del>Accomack County</del>	<del>TRO</del>
<del>86—Appomattox County Sanitary Landfill</del>	<del>Appomattox County</del>	<del>BRRO</del>
<del>582—Botetourt County Landfill<sup>3</sup></del>	<del>Botetourt County</del>	<del>BRRO</del>
<del>498—Bristol City Landfill</del>	<del>City of Bristol</del>	<del>SWRO</del>
<del>72—Franklin County Landfill</del>	<del>Franklin County</del>	<del>BRRO</del>
<del>398—Virginia Beach Landfill #2—Mount Trashmore II<sup>3</sup></del>	<del>City of Virginia Beach</del>	<del>TRO</del>

## Notes:

<sup>1</sup>Department of Environmental Quality Regional Offices:

- ~~BRRO—Blue Ridge Regional Office~~
- ~~NVRO—Northern Virginia Regional Office~~
- ~~PRO—Piedmont Regional Office~~
- ~~SWRO—Southwest Regional Office~~
- ~~TRO—Tidewater Regional Office~~
- ~~VRO—Valley Regional Office~~

<sup>2</sup>This date means the latest date that the disposal area must cease accepting waste.

<sup>3</sup>A portion of these facilities operated under HB 1205 and another portion currently is compliant with Subtitle D req

B. All facilities or disposal areas without a composite liner within a facility boundary that were permitted prior to March 15, 1993, and upon which solid waste has been disposed of prior to October 9, 1993, and met the requirements of § 10.1-1408.1 N of the Code of Virginia were required to cease solid waste acceptance on or before December 31, 2020, pursuant to § 10.1-1413.2 of the Code of Virginia. The closure dates are established in Final Prioritization and Closure Schedule, Chapter 308 of the 2000 Acts of Assembly. These facilities are required to install final cover and close in accordance with 9VAC20-81-160 and perform post-closure care in accordance with 9VAC20-81-170.

C. Facilities are authorized to expand beyond the waste boundaries existing on October 9, 1993, as follows:

1. Existing captive industrial landfills.

- a. Existing nonhazardous industrial waste facilities that are located on property owned or controlled by the generator of the waste disposed of in the facility shall comply with all the provisions of this chapter except as shown in subdivision 1 of this subsection.
- b. Facility owners or operators shall not be required to modify their facility permit in order to expand a captive industrial landfill beyond the waste boundaries existing on October 9, 1993. Liners and leachate collection systems constructed beyond the waste boundaries existing on October 9, 1993, shall be constructed in accordance with the requirements in effect at the time of permit issuance.
- c. Owners or operators of facilities that are authorized under subdivision 1 of this subsection to accept waste for disposal beyond the waste boundaries existing on October 9, 1993, shall ensure that such expanded disposal areas maintain setback distances applicable to such facilities in 9VAC20-81-120.
- d. Facilities authorized for expansion in accordance with subdivision 1 of this subsection are limited to expansion to the limits of the permitted disposal area existing on October 9, 1993, or the facility boundary existing on October 9, 1993, if no discrete disposal area is defined in the facility permit.

2. Other existing industrial waste landfills.

- a. Existing nonhazardous industrial waste facilities that are not located on property owned or controlled by the generator of the waste disposed of in the facility shall comply with all the provisions of this chapter except as shown in subdivision 2 of this subsection.
- b. Facility owners or operators shall not be required to modify their facility permit in order to expand an industrial landfill beyond the waste boundaries existing on October 9, 1993. Liners and leachate collection systems constructed beyond the waste boundaries existing on October 9, 1993, shall be constructed in accordance with the requirements of 9VAC20-81-130.
- c. Prior to the expansion of any such facility, the owner or operator shall submit to the

department a written notice of the proposed expansion at least 60 days prior to commencement of construction. The notice shall include recent groundwater monitoring data sufficient to determine that the facility does not pose a threat of contamination of groundwater in a manner constituting an open dump or creating a substantial present or potential hazard to human health or the environment (see 9VAC20-81-45). The director shall evaluate the data included with the notification and may advise the owner or operator of any additional requirements that may be necessary to ensure compliance with applicable laws and prevent a substantial present or potential hazard to health or the environment.

d. Owners or operators of facilities which are authorized under subdivision 2 of this subsection to accept waste for disposal beyond the waste boundaries existing on October 9, 1993, shall ensure that such expanded disposal areas maintain setback distances applicable to such facilities in 9VAC20-81-120 and 9VAC20-81-130.

e. Facilities authorized for expansion in accordance with subdivision 2 of this subsection are limited to expansion to the limits of the permitted disposal area existing on October 9, 1993, or the facility boundary existing on October 9, 1993, if no discrete disposal area is defined in the facility permit.

### 3. Existing construction/demolition/debris landfills.

a. Existing facilities that accept only construction/demolition/debris waste shall comply with all the provisions of this chapter except as shown in subdivision 3 of this subsection.

b. Facility owners or operators shall not be required to modify their facility permit in order to expand a construction/demolition/debris landfill beyond the waste boundaries existing on October 9, 1993. Liners and leachate collection systems constructed beyond the waste boundaries existing on October 9, 1993, shall be constructed in accordance with the requirements of 9VAC20-81-130.

c. Prior to the expansion of any such facility, the owner or operator shall submit to the department a written notice of the proposed expansion at least 60 days prior to commencement of construction. The notice shall include recent groundwater monitoring data sufficient to determine that the facility does not pose a threat of contamination of groundwater in a manner constituting an open dump or creating a substantial present or potential hazard to human health or the environment (see 9VAC20-81-45). The director shall evaluate the data included with the notification and may advise the owner or operator of any additional requirements that may be necessary to ensure compliance with applicable laws and prevent a substantial present or potential hazard to health or the environment.

d. Owners or operators of facilities which are authorized under subdivision 3 of this subsection to accept waste for disposal beyond the active portion of the landfill existing on October 9, 1993, shall ensure that such expanded disposal areas maintain setback distances applicable to such facilities in 9VAC20-81-120 and 9VAC20-81-130.

e. Facilities, or portions thereof, which have reached their vertical design capacity shall be closed in compliance with 9VAC20-81-160.

f. Facilities authorized for expansion in accordance with subdivision 3 of this subsection are limited to expansion to the permitted disposal area existing on October 9, 1993, or the facility boundary existing on October 9, 1993, if no discrete disposal area is defined in the facility permit.

4. Facilities or units undergoing expansion in accordance with the partial exemptions created by subdivision 1 b, 2 b, or 3 b of this subsection may not receive hazardous wastes generated by the exempt small quantity generators, as defined by the Virginia Hazardous Waste Management Regulations (9VAC20-60), for disposal on the expanded portions of the facility. Other wastes that require special handling in accordance with the requirements of Part VI (9VAC20-81-610 et seq.) of this chapter or that contain hazardous constituents that would pose a risk to health or environment, may only be accepted with specific approval by the director.

5. Nothing in subdivisions 1 b, 2 b, and 3 b of this subsection shall alter any requirement for groundwater monitoring, financial responsibility, operator certification, closure, ~~post-closure~~ post-closure care, operation, maintenance, or corrective action imposed under this chapter, or impair the powers of the director to revoke or modify a permit pursuant to § 10.1-1409 of the Virginia Waste Management Act or Part V (9VAC20-81-400 et seq.) of this chapter.

D. An owner or operator of a previously unpermitted facility or unpermitted activity that managed materials previously exempt or excluded from this chapter shall submit a complete application for a solid waste management facility permit, permit by rule or a permit modification, as applicable, in accordance with Part V (9VAC20-81-400 et seq.) of this chapter within six months after these materials have been defined or identified as solid wastes. If the director finds that the application is complete, the owner or operator may

continue to manage the newly defined or identified waste until a permit or permit modification decision has been rendered or until a date two years after the change in definition whichever occurs sooner, provided however, that in so doing he shall not operate or maintain an open dump, a hazard, or a nuisance.

Owners or operators of solid waste management facilities in existence prior to September 24, 2003, shall now be in compliance with this chapter. Where conflicts exist between the existing facility permit and the new requirements of the regulations, the regulations shall supersede the permit except where the standards in the permit are more stringent than the regulation. Language in an existing permit shall not act as a shield to compliance with the regulation, unless a variance to the ~~regulations~~ regulation has been approved by the director in accordance with the provisions of Part VII (9VAC20-81-700 et seq.) of this chapter. Existing facility permits will not be required to be updated to eliminate requirements conflicting with the regulation, except at the request of the director or if a permit is modified for another reason. However, all sanitary landfills and incinerators that accept waste from jurisdictions outside of Virginia must have submitted the materials required under 9VAC20-81-100 E 4 by March 22, 2004.

E. This chapter is not applicable to landfill units closed in accordance with regulations or permits in effect prior to December 21, 1988, unless releases from these closed landfills meet the open dump criteria found in 9VAC20-81-45, or the closed landfills are found to be a hazard or a nuisance under subdivision 21 of § 10.1-1402 of the Code of Virginia, or a site where improper waste management has occurred under subdivision 19 of § 10.1-1402 of the Code of Virginia.

F. Part VIII (9VAC20-81-800 et seq.) of this chapter applies to the following:

1. Owners and operators of new and existing CCR landfills and CCR surface impoundments, including any lateral expansions of such units that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers;
2. Disposal units located offsite of the electric utility or independent power producer. Part VIII of this chapter also applies to any practice that does not meet the definition of a beneficial use of CCR; and
3. Inactive CCR surface impoundments at active electric utilities or independent power producers, regardless of the fuel currently used at the facility to produce electricity.

G. Part VIII of this chapter is not applicable to the following:

1. CCR landfills that have ceased receiving CCR prior to October 19, 2015;
2. Electric utilities or independent power producers that have ceased producing electricity prior to October 19, 2015;
3. Wastes, including fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated at facilities that are not part of an electric utility or independent power producer, such as manufacturing facilities, universities, and hospitals;
4. Fly ash, bottom ash, boiler slag, and flue gas desulfurization materials, generated primarily from the combustion of fuels (including other fossil fuels) other than coal, for the purpose of generating electricity unless the fuel burned consists of more than 50% coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal;
5. Practices that meet the definition of a beneficial use of CCR;
6. CCR placement at active or abandoned underground or surface coal mines; or
7. Municipal solid waste landfills that receive CCR.

#### **9VAC20-81-40. Prohibitions.**

A. No person shall operate any sanitary landfill or other facility for the disposal, treatment, or storage of solid waste without a permit from the director.

B. No person shall allow waste to be treated, stored, open burned, disposed of, or otherwise managed on his property except in accordance with this chapter. Some activities may be conditionally exempt if conducted as outlined under 9VAC20-81-95.

C. It shall be the duty of all persons to dispose of or otherwise manage their solid waste in a legal manner.

D. Any person who violates subsection A, B, or C of this section shall immediately cease the activity of improper management and the treatment, storage, or disposal of any additional wastes and shall initiate such removal, cleanup, or closure in place.

E. Management of lead acid batteries.

1. No person shall place a used lead acid battery in mixed municipal solid waste or discard or otherwise dispose of a lead acid battery except by delivery to a battery retailer or wholesaler, or to a secondary lead smelter, or to a collection or reclamation facility authorized under the laws of the Commonwealth or by the United States Environmental Protection Agency.

2. No battery retailer shall dispose of a used lead acid battery except by delivery to:
  - a. The agent of a battery wholesaler or a secondary lead smelter;
  - b. A battery manufacturer for delivery to a secondary smelter; or
  - c. A collection or reclamation facility authorized under the laws of the Commonwealth or by the United States Environmental Protection Agency.
3. No person selling new lead acid batteries at wholesale shall refuse to accept from customers at the point of transfer, used lead acid batteries of the type and in a quantity at least equal to the number of new batteries purchased, if offered by customers.
4. The provisions of subdivisions 1 through 3 of this subsection shall not be construed to prohibit any person who does not sell new lead acid batteries from collecting and reclaiming such batteries.

F. Any locality may, by ordinance, prohibit the disposal of cathode ray tubes (CRTs) in any waste to energy or solid waste disposal facility within its jurisdiction if it has implemented a CRT recycling program that meets the requirements of § 10.1-1425.26 of the Code of Virginia.

G. No person shall dispose of or manage solid waste in an unpermitted facility, including by disposing, causing to be disposed, or arranging for the disposal of solid waste upon a property for which the director has not issued a permit and that is not otherwise exempt from permitting requirements.

**9VAC20-81-90. Relationship with other regulations promulgated by the Virginia Waste Management Board.**

A. Virginia Hazardous Waste Management Regulations (9VAC20-60).

1. Solid wastes that have been declared hazardous or a universal waste by the generator in accordance with 40 CFR 262.11, as amended, or that are regulated as hazardous wastes by the Commonwealth or another state, and will be treated, stored, or disposed of in Virginia shall be managed in accordance with the requirements of 9VAC20-60 and not 9VAC20-81.
2. Any material from a state other than Virginia that is classified as a hazardous waste in that state shall be managed in accordance with 9VAC20-60.
3. Wastes generated by generators who are conditionally exempt pursuant to ~~40 CFR 264.5~~ 40 CFR 262.14 may be managed in solid waste management facilities provided that:
  - a. (i) A specific approval is obtained from the director for acceptance of the material at a facility with an approved liner and leachate collection system; or (ii) it is included in the facility permit; and
  - b. Records are kept of the actual amount, type, and source of these wastes.

B. Regulated Medical Waste Management Regulations (9VAC20-120). Solid wastes that are defined as regulated medical wastes by the Regulated Medical Waste Management Regulations shall be managed in accordance with those regulations. Regulated medical wastes that are excluded or exempt by 9VAC20-120 shall be regulated by this chapter.

C. Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70). 9VAC20-70 specifies the requirements for financial assurance and allowable financial assurance mechanisms. Solid waste management facilities shall provide financial assurance in accordance with 9VAC20-70.

D. Solid Waste Management Facility Permit Action Fees and Annual Fees (9VAC20-90). All applicants for solid waste management facility permits are required to pay a fee in accordance with the schedule shown in 9VAC20-90. All solid waste management facilities shall pay annual fees in accordance with 9VAC20-90, as applicable.

E. Solid Waste Planning and Recycling Regulations (9VAC20-130). 9VAC20-130 establishes a framework for local governments to plan for solid waste management needs and a mechanism for tracking recycling rates and solid waste management plan contents.

F. Transportation of Solid and Medical Wastes on State Waters (9VAC20-170). 9VAC20-170 establishes the standards and procedures pertaining to the commercial transport, loading, and offloading of solid wastes or regulated medical wastes upon the navigable waters of the Commonwealth.

G. Voluntary Remediation Regulations (9VAC20-160). 9VAC20-160 establishes standards and procedures for the Virginia Voluntary Remediation Program.

H. Coal Combustion Byproduct Regulations (9VAC20-85). 9VAC20-85 establishes standards for the use of fossil fuel combustion products, which are not subject to requirements of this chapter, and establishes standards for siting, design, construction, operation, and administrative procedures pertaining to their use, reuse, or reclamation other than in a manner addressed by this chapter.

**9VAC20-81-95. Identification of solid waste.**

- A. Wastes identified in this section are solid wastes that are subject to this chapter unless regulated

pursuant to other applicable regulations issued by the department.

B. Except as otherwise provided, the definition of solid waste per 40 CFR 261.2 as incorporated by 9VAC20-60-261, as amended, is also hereby incorporated as part of this chapter. Except as otherwise provided, all material definitions, reference materials and other ancillaries that are a part of 9VAC20-60-261, as amended, are also hereby incorporated as part of this chapter as well.

C. Except as otherwise modified or excepted by 9VAC20-60, the materials listed in the regulations of the United States Environmental Protection Agency set forth in 40 CFR 261.4(a) are considered a solid waste for the purposes of this chapter. However, these materials are not regulated under the provisions of this chapter if all conditions specified therein are met. This list and all material definitions, reference materials and other ancillaries that are part of 40 CFR Part 261.4(a), as incorporated, modified or accepted by 9VAC20-60 are incorporated as part of this chapter. In addition, the following materials are not solid wastes for the purpose of this chapter:

1. Materials generated by any of the following, which are returned to the soil as fertilizers:
  - a. The growing and harvesting of agricultural crops.
  - b. The raising and husbanding of animals, including animal manures and used animal bedding.
2. Mining overburden returned to the mine site.
3. Recyclable materials used in manner constituting disposal per 9VAC20-60-266.
4. Wood wastes burned for energy recovery.
5. Materials that are:
  - a. Used or reused, or prepared for use or reuse, as an ingredient in an industrial process to make a product, or as effective substitutes for commercial products or natural resources provided the materials are not being reclaimed or accumulated speculatively; or
  - b. Returned to the original process from which they are generated.
6. Materials that are beneficially used as determined by the department under this subsection. The department may consider other waste materials and uses to be beneficial in accordance with the provisions of 9VAC20-81-97.
7. The following materials and uses listed in this part are exempt from this chapter as long as they are managed so that they do not create an open dump, hazard, or public nuisance. These materials and the designated use are considered a beneficial use of waste materials:
  - a. Clean wood, wood chips, or bark from ~~land-clearing~~, land-clearing, logging operations, utility line clearing and maintenance operations, pulp and paper production, and wood products manufacturing, when these materials are placed in commerce for service as mulch, landscaping, animal bedding, erosion control, habitat mitigation, wetlands restoration, or bulking agent at a compost facility operated in compliance with Part IV (9VAC20-81-300 et seq.) of this chapter;
  - b. Clean wood combustion residues when used for pH adjustment in compost, liquid absorbent in compost, or as a soil amendment or fertilizer, provided the application rate of the wood ash is limited to the nutrient need of the crop grown on the land on which the wood combustion residues will be applied and provided that such application meets the requirements of the Virginia Department of Agriculture and Consumer Services (2VAC5-400 and 2VAC5-410);
  - c. Compost or soil amendment that satisfies the applicable requirements of the Virginia Department of Agriculture and Consumer Services (2VAC5-400 and 2VAC5-410);
  - d. Nonhazardous, contaminated soil that has been excavated as part of a construction project and that is used as backfill for the same excavation or excavations containing similar contaminants at the same site, at concentrations at the same level or higher. Excess contaminated soil from these projects is subject to the requirements of this chapter;
  - e. Nonhazardous petroleum contaminated soil that has been treated to the satisfaction of the department in accordance with 9VAC20-81-660;
  - f. Nonhazardous petroleum contaminated soil when incorporated into asphalt pavement products;
  - g. Solid wastes that are approved in advance of the placement, in writing, by the department or that are specifically mentioned in the facility permit for use as alternate daily cover material or other protective materials for landfill liner or final cover system components;
  - h. Fossil fuel combustion products that are not CCR when used as a material in the manufacturing of another product (e.g., concrete, concrete products, lightweight aggregate, roofing materials, plastics, paint, flowable fill) or as a substitute for a product or material resource (e.g., blasting grit, roofing granules, filter cloth pre-coat for sludge dewatering, pipe bedding);
  - i. Tire chips and tire shred when used as a sub-base fill for road base materials or asphalt

pavements when approved by the Virginia Department of Transportation or by a local governing body;

j. Tire chips, tire shred, and ground rubber used in the production of commercial products such as mats, pavement sealers, playground surfaces, brake pads, blasting mats, and other rubberized commercial products;

k. Tire chips and tire shred when used as backfill in landfill gas or leachate collection pipes, recirculation lines, and drainage material in landfill liner and cover systems, and gas interception or remediation applications;

l. Waste tires, tire chips or tire shred when burned for energy recovery or when used in pyrolysis, gasification, or similar treatment process to produce fuel;

m. Waste-derived fuel product, as defined in 9VAC20-81-10, derived from nonhazardous solid waste;

n. Uncontaminated concrete and concrete products, asphalt pavement, brick, glass, soil, and rock placed in commerce for service as a substitute for conventional aggregate; and

o. Clean, ground gypsum wallboard when used as a soil amendment or fertilizer, provided the following conditions are met:

(1) No components of the gypsum wallboard have been glued, painted, or otherwise contaminated from manufacture or use (e.g., waterproof or fireproof drywall) unless otherwise processed to remove contaminants.

(2) The gypsum wallboard shall be processed so that 95% of the gypsum wallboard is less than 1/4 inch by 1/4 inch in size, unless an alternate size is approved by the department.

(3) The gypsum wallboard shall be applied only to agricultural, silvicultural, landscaped, or mined lands or roadway construction sites that need fertilization.

(4) The application rate for the ground gypsum wallboard shall not exceed the following rates.

Region	Rate
Piedmont, Mountains, and Ridge and Valley	250 lbs/1,000 ft <sup>2</sup>
Coastal Plain	50 lbs/1,000 ft <sup>2</sup>
Note: These weights are for dry ground gypsum wallboard.	

D. The following activities are conditionally exempt from this chapter provided no open dump, hazard, or public nuisance is created:

1. Composting of sewage sludge at the sewage treatment plant of generation without addition of other types of solid wastes.

2. Composting of household waste generated at a residence and composted at the site of generation.

3. Composting activities performed for educational purposes as long as no more than 100 cubic yards of materials are onsite at any time. Greater quantities will be allowed with suitable justification presented to the department. For quantities greater than 100 cubic yards, approval from the department will be required prior to composting.

4. Composting of animal carcasses and animal manures onsite at the farm of generation. Farms may accept Category I feedstocks and manures from herbivorous animals generated offsite provided the requirements of 9VAC20-81-397 B 2 are met.

5. Composting of vegetative waste or yard waste generated onsite by owners or operators of agricultural operations or owners of the real property or those authorized by the owners of the real property provided:

a. All decomposed vegetative waste and compost produced is utilized on said property;

b. No vegetative waste or other waste material generated from other sources other than said property is received;

c. All applicable standards of local ordinances that govern or concern vegetative waste handling, composting, storage or disposal are satisfied; and

d. They pose no nuisance or present no potential threat to human health or the environment.

6. Composting of yard waste by owners or operators who accept yard waste generated offsite shall be exempt from all other provisions of this chapter as applied to the composting activities provided the requirements of 9VAC20-81-397 B are met.

7. Composting of preconsumer food waste and kitchen culls generated onsite and composted in

containers designed to prohibit vector attraction and prevent nuisance odor generation.

8. Vermicomposting, when used to process Category I, Category II, or Category III feedstocks in containers designed to prohibit vector attraction and prevent nuisance odor generation. If offsite feedstocks are received no more than 100 cubic yards of materials may be onsite at any one time. For quantities greater than 100 cubic yards, approval from the department will be required prior to composting.

9. Composting of sewage sludge or combinations of sewage sludge with nonhazardous solid waste provided the composting facility is permitted under the requirements of a Virginia Pollution Abatement (VPA) or VPDES permit.

10. Management of solid waste in appropriate containers meeting the criteria of 9VAC20-81-98 at the site of its generation or at a convenience center, provided that:

a. Putrescible waste is not stored more than seven days between time of collection and time of removal for proper management or disposal;

b. Nonputrescible wastes are not stored more than 90 days between time of collection and time of removal for proper management or disposal; and

c. Treatment of waste is conducted in accordance with the following:

(1) In accordance with a waste analysis plan that:

(a) Contains a detailed chemical and physical analysis of a representative sample of the waste being treated and contains all records necessary to treat the waste in accordance with the requirements of this part, including the selected testing frequency; and

(b) Is kept in the facility's onsite file and made available to the department upon request.

(2) Notification is made to the receiving waste management facility that the waste has been treated; and

d. Management of waste prevents discharges of leachate and wastewater.

11. ~~Using rocks, brick, block, dirt, broken concrete, crushed glass, porcelain, and road pavement~~ any of the following uncontaminated materials as clean fill:

a. Rocks;

b. Brick;

c. Block;

d. Dirt;

e. Broken concrete without protruding rebar;

f. Crushed glass;

g. Porcelain; and

h. Road pavement.

12. Storage of less than 100 waste tires at the site of generation provided that no waste tires are accepted from offsite and that the storage will not present a hazard or a nuisance.

13. Storage in piles of land-clearing debris including stumps and brush, clean wood wastes, log yard scrapings consisting of a mixture of soil and wood, cotton gin trash, peanut hulls, and similar organic wastes that do not readily decompose, are exempt from this chapter if they meet the following conditions at a minimum:

a. The wastes are managed in the following manner:

(1) They do not cause discharges of leachate, or attract vectors.

(2) They cannot be dispersed by wind and rain.

(3) Fire is prevented.

(4) They do not become putrescent.

b. Any facility storing waste materials under the provisions of this subsection shall obtain a stormwater discharge permit if they are considered a significant source under the provisions of 9VAC25-31-120 A B 1 c.

c. No more than a total of 1/3 acre of waste material is stored onsite and the waste pile does not exceed 15 feet in height above base grade.

d. Siting provisions.

(1) All log yard scrapings consisting of a mixture of soil and wood, cotton gin trash, peanut hulls, and similar organic wastes that do not readily decompose are stored at the site of the industrial activity that produces them;

(2) A 50-foot fire break is maintained between the waste pile and any structure or tree line;

(3) The slope of the ground within the area of the pile and within 50 feet of the pile does not exceed 4:1;

(4) No waste material may be stored closer than 50 feet to any regularly flowing surface water body or river, floodplain, or wetland; and

(5) No stored waste materials shall extend closer than 50 feet to any property line.

e. If activities at the site cease, any waste stored at the site must be properly managed in accordance with these regulations within 90 days. The director can approve longer timeframes with appropriate justification. Justification must be provided in writing no more than 30 days after ceasing activity at the site.

f. Waste piles that do not meet these provisions are required to obtain a permit in accordance with the permitting provisions in Part V (9VAC20-81-400 et seq.) of this chapter and meet all of the applicable waste pile requirements in Part IV (9VAC20-81-300 et seq.) of this chapter. Facilities that do not comply with the provisions of this subsection and fail to obtain a permit are subject to the provisions of 9VAC20-81-40.

14. Storage of nonhazardous solid wastes and hazardous wastes, or hazardous wastes from very small quantity generators as defined in Virginia Hazardous Waste Management Regulations (9VAC20-60) at a transportation terminal or transfer station in closed containers meeting the U.S. Department of Transportation specifications is exempt from this section and the permitting provisions of Part V (9VAC20-81-400 et seq.) of this chapter provided such wastes are removed to a permitted storage or disposal facility within 10 days from the initial receipt from the waste generator. To be eligible for this exemption, each shipment must be properly documented to show the name of the generator, the date of receipt by the transporter, and the date and location of the final destination of the shipment. The documentation shall be kept at the terminal or transfer station for at least three years after the shipment has been completed and shall be made available to the department upon request. All such activities shall comply with any local ordinances.

15. Open burning of solid wastes as provided in the following:

a. For forest management, agriculture practices, and highway construction and maintenance programs approved by the State Air Pollution Control Board.

b. For training and instruction of government and public firefighters under the supervision of the designated official and industrial in-house firefighting personnel with clearance from the local firefighting authority. Buildings that have not been demolished may be burned under the provisions of this subdivision only. Additionally, burning rubber tires, asphaltic materials, crankcase oil, impregnated wood, or other rubber-based or petroleum-based wastes is permitted when conducting bona fide firefighting instruction. Open burning in Volatile Organic Compound Emissions Control Areas as designated by 9VAC5-20-206 may be subject to additional requirements under the state air pollution control regulations.

c. For the destruction of classified military documents under the supervision of the designated official.

d. For campfires or other fires using clean wood or vegetative waste that are used solely for recreational purposes, for ceremonial occasions, for outdoor preparation of food, and for warming of outdoor workers.

e. For the onsite destruction of vegetative waste, clean wood, and clean paper products, located on the premises of private property, provided that no regularly scheduled collection service for such vegetative waste is available at the adjacent street or public road.

~~f. For the onsite destruction of household waste by homeowners or tenants, provided that no regularly scheduled collection service for such household waste is available at the adjacent street or public road.~~

~~g. f.~~ For the onsite destruction of clean wood waste and debris waste resulting from property maintenance; from the development or modification of roads and highways, parking areas, railroad tracks, pipelines, power and communication lines, buildings or building areas, sanitary landfills; or from any other clearing operations. Open burning in volatile organic compound emissions control areas as designated by 9VAC5-20-206 is prohibited from May 1 through September 30.

g. For the destruction of debris waste from cleanup operations, in the event that the Governor declares a state of emergency. Open burning in volatile organic compound emissions control areas as designated by 9VAC5-20-206 may require a variance from the State Air Pollution Control Board.

16. Open burning of vegetative waste is allowed at a closed landfill that has not been released from ~~post-closure~~ post-closure care. There shall be no open burning permitted on areas where solid waste has been disposed of. The activity shall be included in the text of the ~~post-closure~~ post-closure

plan and conducted in accordance with § 10.1-1410.3 of the Code of Virginia. Open burning at a closed landfill shall be limited to five days per quarter. Facilities located in volatile organic compound emissions control areas as designated by 9VAC5-20-206 shall not burn from May 1 through September 30.

17. Placement of trees, brush, or other vegetation from land used for agricultural or silvicultural purposes on the same property or other property of the same landowner.

18. Using fossil fuel combustion products that are not CCR in one or more of the following applications or when handled, processed, transported, or stockpiled for the following uses:

a. As a base, sub-base or fill material under a paved road, the footprint of a structure, a paved parking lot, sidewalk, walkway, or similar structure, or in the embankment of a road. In the case of roadway embankments, materials will be placed in accordance with Virginia Department of Transportation specifications, and exposed slopes not directly under the surface of the pavement must have a minimum of 18 inches of soil cover over the fossil fuel combustion products, the top six inches of which must be capable of sustaining the growth of indigenous plant species or plant species adapted to the area. The use, reuse, or reclamation of unamended coal combustion byproduct shall not be placed in an area designated as a 100-year flood plain;

b. Processed with a cementitious binder to produce a stabilized structural fill product that is spread and compacted with proper equipment for the construction of a project with a specified end use; or

c. For the extraction or recovery of materials and compounds contained within the fossil fuel combustion products.

19. Composting activities performed in conjunction with a public or private event or festival to manage organic wastes generated during the event as long

as no more than 100 cubic yards of materials are on site at any time. Greater quantities may be allowed with suitable justification presented to the

department. For quantities greater than 100 cubic yards, approval from the department shall be required prior to composting.

20. Storage of nonhazardous solid wastes generated from an emergency cleanup (conducted in order to protect public safety, human health, and the environment) is allowed at the cleanup site or another property provided that:

a. Waste is managed in appropriate containers meeting the criteria of 9VAC20-81-98;

b. Putrescible waste is not stored more than seven days between time of collection (cleanup) and time of removal for proper management or disposal;

c. Nonputrescible waste is not stored more than 90 days between time of collection (cleanup) and time of removal for proper management or disposal; and

d. Management of waste prevents discharges of leachate and wastewater.

E. The following solid wastes are exempt from this chapter provided that they are managed in accordance with the requirements promulgated by other applicable state or federal agencies:

1. Management of wastes regulated by the State Board of Health, the State Water Control Board, the Air Pollution Control Board, the Department of ~~Mines, Minerals and Energy~~, Department of Agriculture and Consumer Services, or any other state or federal agency with such authority.

2. Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy.

3. Solid waste from the extraction, beneficiation, and processing of ores and minerals, including coal.

4. Fossil fuel combustion products used for mine reclamation, mine subsidence, or mine refuse disposal on a mine site permitted by the Virginia Department of ~~Mines, Minerals and Energy (DMME)~~ when used in accordance with the standards.

5. Solid waste management practices that involve only the onsite placing of solid waste from mineral mining activities at the site of those activities and in compliance with a permit issued by the ~~DMME~~, Department of Energy that do not include any municipal solid waste, are accomplished in an environmentally sound manner, and do not create an open dump, hazard or public nuisance are exempt from all requirements of this chapter.

6. Waste or byproduct derived from an industrial process that meets the definition of fertilizer, soil amendment, soil conditioner, or horticultural growing medium as defined in § 3.2-3600 of the Code of Virginia, or whose intended purpose is to neutralize soil acidity (see § 3.2-3700 of the Code of Virginia), and that is regulated under the authority of the Virginia Department of Agriculture and

Consumer Services.

7. Fossil fuel combustion products bottom ash or boiler slag used as a traction control material or road surface material if the use is consistent with Virginia Department of Transportation practices. This exemption does not apply to CCR used in this manner.

8. Waste tires generated by and stored at salvage yards licensed by the Department of Motor Vehicles provided that such storage complies with requirements set forth in § 10.1-1418.2 of the Code of Virginia and such storage does not pose a hazard or nuisance.

9. Tire chips used as the drainage material in construction of septage drain fields regulated under the authority of the Virginia Department of Health.

F. The following solid wastes are exempt from this chapter provided that they are reclaimed or temporarily stored incidentally to reclamation, are not accumulated speculatively, and are managed without creating an open dump, hazard, or a public nuisance:

1. Paper and paper products;
2. Clean wood waste that is to undergo size reduction in order to produce a saleable product, such as mulch;
3. Cloth;
4. Glass;
5. Plastics;
6. Tire chips, tire shred, ground rubber; and
7. ~~Mixtures of above materials only. Such mixtures may include scrap metals excluded from regulation in accordance with the provisions of subsection C of this section. Scrap metal excluded from regulation in accordance with the provisions of subsection C of this section; and~~
8. Mixtures of above materials only.

#### **9VAC20-81-98. Appropriate containers.**

A. The use of appropriate containers is a critical component of proper management of waste.

B. Appropriate containers or compactors shall be:

1. Of adequate size to physically contain all the waste that is placed into it in a manner that is not a fire, health, or safety hazard, or provides food or harborage for vectors;
2. Constructed of corrosion resistant metal, durable or rigid plastic, or other material that will not absorb water, grease, or oil;
3. Compatible with the type of waste to be stored;
4. Leak-proof [ Leak-resistant ] ; including sides, seams, and bottoms, and durable enough to withstand anticipated usage without rusting, cracking, or deforming in a manner that would make it a fire health or safety hazard or provide harborage for vectors;
5. In the case of containers used for compaction, the container must be capable of withstanding the full force of the ram; and
6. Designed or equipped to prevent spillage so that it cannot be tipped over easily.

C. Single use plastic and paper bags must:

1. Meet the National Sanitation Foundation (NSF) Standard No. 31 for polyethylene refuse bags and Standard No. 32 for paper refuse bags, respectively. However, such bags do not need to have been certified by the NSF; and
2. Be stored between collection periods in a manner that protects its contents from scavenging animals (i.e., dogs, raccoons, cats, rats, etc.) and vectors if the bags contain putrescible waste. This can be accomplished by storing the plastic bags either within the confines of a building or within an appropriate container as described in subsection B of this section.

#### **9VAC20-81-100. General.**

A. Any person who constructs, or operates any solid waste disposal facility, not otherwise exempt under 9VAC20-81-35 D, shall comply with the requirements of this part. Further, all applications for permits pursuant to these standards shall demonstrate specific means proposed for compliance with requirements set forth in this part.

B. All solid waste disposal facilities shall be maintained and operated in accordance with the permit issued pursuant to this regulation, and in accordance with the approved design and intended use of the facility.

C. Hazardous wastes shall not be disposed of or managed in solid waste disposal facilities subject to this regulation unless specifically authorized by the facility permit or the director.

D. A solid waste management facility regulated under Part IV (9VAC20-81-300 et seq.) of this chapter

will become subject to the closure and ~~postclosure~~ post-closure care standards contained in this part if solid waste will remain after the closure of such a facility.

E. Control program for unauthorized waste.

1. All landfills are required to implement a control program for unauthorized waste in accordance with the provisions of this section. A written description of the program will be placed in the ~~operating record~~ facility's operations manual. Additional provisions for ~~sanitary~~ all landfills (other than captive industrial landfills) required in subdivision 5 of this subsection are required to be placed in the landfill's operating record. The owner or operator shall institute a control program (including measures such as signs at all maintained access points indicating hours of operation and the types of solid waste accepted and not accepted, monitoring, alternate collection programs, passage of local laws, etc.) to assure that only solid waste authorized by the department to be treated, disposed of, or transferred at the landfill is being treated, disposed of, or transferred at that landfill. The owner or operator must develop and implement a program to teach the landfill's staff to recognize, remove, and report receipt of solid waste not authorized by the department to be treated, disposed of, or transferred at the landfill.

2. If unauthorized waste is observed in the waste delivered to the facility prior to unloading, the owner or operator may refuse to accept the waste. If the owner or operator has accepted the waste, the owner or operator shall remove it, segregate it, and provide to the department a record identifying that waste and its final disposition. Records of each incident shall be available for department review. Any unauthorized waste accepted by the owner or operator shall be managed in accordance with applicable federal or state laws and regulations.

3. Solid waste not authorized by the department to be treated, disposed of, or transferred at the landfill that is segregated shall be adequately secured and contained to prevent leakage or contamination of the environment. The solid waste management facility owner or operator shall have the unauthorized waste removed or properly managed as soon as practicable, but not more than 90 days after discovery. Removal shall be by a person authorized to transport such waste to a waste management facility approved to receive it for treatment, disposal, or transfer.

4. Each noncaptive landfill receiving waste generated outside Virginia shall include provisions in the landfill's unauthorized waste control program for notifying customers outside of Virginia of Virginia's requirements and for preventing the acceptance of prohibited wastes. Each noncaptive landfill shall comply with the same increased random inspection provisions presented for all such landfills in subdivision 5 of this subsection, as applicable.

5. The owner or operator of all landfills (other than captive industrial landfills) shall implement an inspection program to be conducted by landfill personnel to detect and prevent disposal of those wastes prohibited in 9VAC20-81-40 and 9VAC20-81-140. In addition to implementing the requirements of the control program for unauthorized waste in this subsection, the program shall include, at a minimum:

a. The procedures for the routine monitoring and observation of incoming waste at the working face of the landfill;

b. The procedures for random inspections of incoming loads to detect whether incoming loads contain regulated hazardous wastes, PCB wastes, regulated medical waste, or other unauthorized solid waste and ensure that such wastes are not accepted at the landfill. The owner or operator shall inspect a minimum of 1.0% of the incoming loads of waste. In addition, if the facility receives waste generated outside of Virginia and the regulatory structure in that jurisdiction allows for the disposal or incineration of wastes as municipal solid waste that Virginia's laws and regulations prohibit or restrict, the facility shall inspect a minimum of 10% of the incoming loads from that jurisdiction;

c. Records of all inspections, to include at a minimum time and date of the inspection, the personnel involved, the hauler, the type of waste observed, the identity of the generator of the waste if it can be determined, the location of the facility where the waste was handled prior to being sent to the landfill, and the results of the inspection. All records associated with unauthorized waste monitoring and incidents shall be retained onsite for a minimum of three years and shall be available for inspection by the department;

d. Training of landfill personnel to recognize and manage regulated hazardous waste, PCB wastes, regulated medical waste, and other unauthorized solid wastes. Refresher training on the unauthorized waste control program shall be conducted on an annual basis (at least once every 12 months);

e. Notification to the department in accordance with 9VAC20-81-530 C 3 if a regulated hazardous waste, PCB waste, regulated medical waste, or other unauthorized waste is discovered at the landfill. ~~This notification will be made orally as soon as possible, but no later~~

~~than 24 hours after the occurrence and shall be followed within five working days by a written report that includes a description of the event, the cause of the event, the time and date of the event, and the actions taken to respond to the event; and~~

f. All regulated medical waste, PCB waste, or other unauthorized solid waste that are detected at a landfill shall be isolated from the incoming waste and properly contained until arrangements can be made for proper transportation for treatment or disposal at an approved facility.

### **9VAC20-81-120. Siting requirements.**

~~A.~~ A. The siting of the waste management boundary for all new sanitary, CDD, and industrial landfills shall be governed by the standards set forth in this section.

~~A.~~ B. Floodplains. No new ~~landfill~~ or expanded waste management boundary shall be sited in a 100-year floodplain.

~~B.~~ C. Stable areas. New ~~landfills~~ and expanded waste management boundaries shall be sited in geologically stable areas where adequate foundation support for the structural components of the landfill exists. At a minimum, factors to be considered when determining stable areas shall include:

1. Onsite or local soil conditions that may result in differential settling and subsequent failure of structural components or containment structures; and
2. Onsite or local geological or manmade features or events that may result in sudden or nonsudden events and subsequent failure of structural components or containment structures.

~~C.~~ D. Restrictions (distances are to be measured in the horizontal plane).

1. No ~~disposal unit or leachate storage unit~~ new or expanded waste management boundary shall be closer than:

- a. ~~200~~ 500 feet from any residence, school, daycare center, hospital, nursing home, or recreational park area in existence at the time of application;
- b. 100 feet from any perennial stream or river;
- c. ~~50~~ 100 feet from the facility boundary;
- d. 500 feet from any well, spring, or other groundwater source of drinking water in existence at the time of application; and
- e. 1,000 feet from the nearest edge of the right-of-way of any interstate or primary highway or 500 feet from the nearest edge of the right-of-way of any other highway or city street, except the following:
  - (1) Units that are screened by natural objects, plantings, fences, or other means so as to minimize the visibility from the main-traveled way of the highway or city street, or otherwise removed from sight;
  - (2) Units that are located in areas that are zoned for industrial use under authority of state law or in unzoned industrial areas as determined by the Commonwealth Transportation Board; or
  - (3) Units that are not visible from the main-traveled way of the highway or city street.

2. No new ~~landfill~~ or expanded waste management boundary shall be sited or constructed in any park or recreational area, wildlife management area, or area designated by the federal or state agency as the critical habitat of any endangered species or locally designated resource protection area as defined in 9VAC25-830-80 [ - ] [ unless it has been approved by the locality pursuant to the requirements of 9VAC25-830-10 et seq. including 9VAC25-830-150. ]

3. Sanitary landfills.

a. No new or expanded waste management boundary for a sanitary landfill area shall be sited or constructed:

- (1) Within a one mile upgradient of any existing surface or groundwater public water supply intake or reservoir;
- (2) Within three miles upgradient of any existing surface or groundwater public water supply intake or reservoir except as allowed under the provisions of § 10.1-1408.4 B 3 of the Code of Virginia;
- (3) In any area vulnerable to flooding resulting from dam failures;
- (4) Over a sinkhole or less than 100 feet over a solution cavern associated with karst topography; or
- (5) Over a fault that has had displacement in Holocene time.

b. No new or expanded waste management boundary for a sanitary landfill ~~or expansion of an existing sanitary landfill~~ shall be sited or constructed:

- (1) Within 200 feet of a fault that has had displacement in Holocene time unless the owner or

operator demonstrates to the director that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the facility and will be protective of human health and the environment; or

(2) Within seismic impact zones, unless the owner or operator demonstrates to the director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

D. E. Groundwater.

1. No new facility or expanded waste management boundary shall be located in areas where groundwater monitoring cannot be conducted in accordance with 9VAC20-81-250 unless this requirement is suspended by the director pursuant to subdivision A 1 c of that section. Factors to be considered in determining whether or not a site can be monitored shall include:

- a. Ability to characterize the direction of groundwater flow within the uppermost aquifer;
- b. Ability to characterize and define any releases from the landfill so as to determine what corrective actions are necessary; and
- c. Ability to perform corrective action as necessary;

E. F. Wetlands.

1. Sanitary landfills.

a. New and expanded waste management boundaries for sanitary landfills and expansions of existing landfills, other than those impacting less than 2.0 acres of nontidal wetlands, shall not be sited or constructed in any tidal wetland or nontidal wetland contiguous to any surface water body.

b. After July 1, 1999, construction at existing permitted facilities (allowed under the provisions of § 10.1-1408.5) only will be allowed with approvals under the provisions of 9VAC25-210. In addition, the demonstration noted in subdivision 3 of this subsection must be made by the owner or operator to the director.

2. New and expanded waste management boundaries for CDD or industrial landfills and expansions of existing CDD or industrial landfills shall not be located in wetlands, unless the owner or operator can make the demonstration noted in subdivision 3 of this subsection.

3. Demonstration.

a. Where applicable under § 404 of the Clean Water Act or § 62.1-44.15:5 of the Code of Virginia, the presumption is clearly rebutted that a practicable alternative to the proposed landfill exists that does not involve wetlands;

b. The construction and operation of the landfill will not:

- (1) Cause or contribute to violations of any applicable water quality standard;
- (2) Violate any applicable toxic effluent standard or prohibition under § 307 of the Clean Water Act;
- (3) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and
- (4) Violate any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary;

c. The landfill will not cause or contribute to significant degradation of wetlands. The owner or operator shall demonstrate the integrity of the landfill and its ability to protect ecological resources by addressing the following factors:

- (1) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the landfill;
- (2) Erosion, stability, and migration potential of dredged and fill materials used to support the landfill;
- (3) The volume and chemical nature of the waste managed in the landfill;
- (4) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of the solid waste;
- (5) The potential effects of catastrophic release of waste to the wetland and the resulting impacts on the environment; and
- (6) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are protected;

d. To the extent required under § 404 of the Clean Water Act or applicable Virginia wetlands

laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent practicable as required by subdivision 3 of this subsection, then minimizing unavoidable impacts to the maximum extent practicable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and practicable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of manmade wetlands); and

e. Information is available to enable the department to make a reasonable determination with respect to these demonstrations.

~~F.~~ G. Limiting site characteristics.

1. Certain site characteristics may prevent approval or require substantial limitations on the site use or require incorporation of sound engineering controls. Such site characteristics shall be identified and an explanation of precautions necessary to assure compliance with the provisions of this chapter shall be provided. Examples include, ~~but are not limited to:~~

- a. Excessive slopes (greater than 33%);
- b. Lack of readily available cover materials on site, or lack of a firm commitment for adequate cover material from a borrow site;
- c. Springs, seeps, or other groundwater intrusion into the site;
- d. The presence of gas, water, sewage, or electrical or other transmission lines under the site; or
- e. The prior existence on the site of an open dump, unpermitted landfill, lagoon, or similar unit, even if such a unit is closed, will be considered a defect in the site unless the proposed unit can be isolated from the defect by the nature of the unit design and the groundwater for the proposed unit can be effectively monitored.

~~G.~~ H. Specific site conditions may be considered in approving an exemption of a site from the following:

1. The limiting site characteristics in subsection F of this section for all landfills; and
2. The groundwater monitoring in subsection D of this section for CDD and industrial landfills.

~~H.~~ I. Acceptable landfill sites shall allow for adequate area and terrain for management of leachate.

~~I.~~ J. Airport safety.

1. Owners or operators of all sanitary landfills with new or expanded waste management boundaries that are located within 10,000 feet of any airport runway end used by turbojet aircraft or within 5,000 feet of any airport runway end used by only piston-type aircraft shall demonstrate that the units are designed and operated so that the landfill does not pose a bird hazard to aircraft.

2. Owners or operators proposing to site new or expanded waste management boundaries for a sanitary landfill ~~and expansions of an existing landfill~~ within a ~~five-mile~~ six-mile radius of any airport runway end used by turbojet or piston-type aircraft shall notify the affected airport and the Federal Aviation Administration (FAA). Owners and operators should also be aware that 49 USC § 44718(d), restricts the establishment of landfills within six miles of public airports under certain conditions. Provisions for exemptions from this law also exist.

~~J.~~ K. For CDD landfills located in strip mine pits, all coal seams and coal outcrops shall be isolated from solid waste materials by a minimum of five feet of natural or compacted soils with a hydraulic conductivity equal to or less than  $1 \times 10^{-7}$  cm/sec.

**9VAC20-81-130. Design and construction requirements.**

A. The design and construction of all sanitary, CDD, and industrial landfills shall be governed by the standards set forth in this section.

~~B.~~ B. Both the landfill capacity (in cubic yards) and the daily disposal limit shall be specified.

~~B.~~ C. All facilities shall be surrounded on all sides by natural barriers, fencing, or an equivalent means of controlling vehicular and public access and preventing illegal disposal. All access will be limited by gates, and such gates shall be securable and equipped with locks, except, in the case of industrial disposal sites where the solid waste disposal landfill is on site of the industrial facility where access is limited.

~~C.~~ D. All landfill access roads shall be provided with a base capable of withstanding anticipated heavy vehicle loads and shall be all-weather roads extending from the entrance of the landfill to the working face.

~~D.~~ E. All facilities, except captive industrial, shall have an adequately lighted and heated shelter where operating personnel can exercise site control and have access to essential sanitation facilities. Lighting, heat, and sanitation facilities may be provided by portable equipment as necessary.

~~E.~~ F. Aesthetics shall be considered in the design of a landfill or site. Use of artificial or natural screens shall be incorporated into the design for site screening and noise attenuation. The design shall reflect those requirements, if any, that are determined from the long-range plan for the future use of the site. Noise attenuation shall be less than 80 dBA at the facility boundary.

F. ~~G.~~ All landfills shall be equipped with permanent or mobile telephone or radio communications except at industrial landfills where other onsite resources are available.

~~G. Two~~ H. A minimum of two survey benchmarks shall be established and maintained on the landfill site, and their location identified or recorded on drawings and maps of the landfill. Benchmark horizontal and geometric locations shall be provided in the North American Datum of 1983 (NAD83), and elevations shall be provided in the National Geodetic Vertical Datum of 1929 (NGVD 29) or North American Vertical Datum of 1988 (NAVD88), or shall be referenced to a datum and geographic coordinate system in accordance with the latest [ ~~industry standard.~~ ] [ surveying or geographic information system (GIS) industry standard.]

H. I. Surface water runoff. Facilities shall be designed based on current available rainfall intensity data to provide and maintain:

1. A run-on control system to prevent flow onto the active portion of the landfill during the peak discharge from a 24-hour, 25-year storm;
2. A ~~run-off~~ runoff control system from the active portion of the landfill to collect and control at least the water volume resulting from a 24-hour, 25-year storm. ~~Run-off~~ Runoff from the active portion of the landfill unit shall be handled in a manner that will not cause the discharge of:
  - a. Pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act, including, ~~but not limited to,~~ the Virginia Pollutant Discharge Elimination System (VPDES) requirements; and
  - b. A nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an areawide or statewide water quality management plan that has been approved under § 208 or 319 of the Clean Water Act, as amended; ~~and~~
3. Drainage structures shall be installed and continuously maintained to prevent ponding and erosion, and to minimize infiltration of water into solid waste cells; ~~and~~
4. Erosion and sediment control measures for all areas of land-disturbing activity, consistent with the Erosion and Sediment Control Regulations (9VAC25-840) [ ~~and the minimum standards and specifications~~ ] .

I. J. A fire break of 50 feet shall be designed between the limits of waste and all tree lines.

J. K. Bottom liner.

1. Sanitary landfills.

All sanitary landfills shall be underlain by a composite liner system as follows:

- a. Subtitle D Liner System.

(1) Base preparation to protect the liner by preventing liner failure through subsidence or structural failure of the liner system.

(2) A lower liner consisting of at least a two-foot layer of compacted soil or augmented soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.

(3) An upper component consisting of a minimum 30 mil flexible membrane liner (FML). If high density polyethylene (HDPE) is used as an FML, it shall be at least 60 mil thick. The FML component shall be:

(a) Installed in direct and uniform contact with the compacted soil liner;

(b) Placed in accordance with an approved construction quality control/quality assurance program submitted with the design plans; and

(c) Placed with a minimum of 2.0% slope for leachate drainage.

- b. ~~Alternate Liner System.~~ FML/Geosynthetic Clay Liner (GCL).

(1) The ~~alternate~~ FML/GCL liner system presented below is the minimum that is required under these regulations requiring no demonstration. If additional components to this ~~alternate~~ FML/GCL system are incorporated into the liner design, no demonstration will be required, pursuant to subdivision J 1 c of this section.

(2) A controlled subgrade with a minimum thickness of 12 inches shall be provided immediately beneath the ~~alternate~~ FML/GCL liner. The controlled subgrade ~~shall consist of soils having a Unified Soil Classification of SC, ML, CL, MH, or CH and~~ shall be compacted to a minimum of 95% of the maximum dry density, as determined by ASTM D698 (Standard Proctor). The surface shall be rolled smooth and be free of rocks or stones in excess of 0.75 inches prior to placement of the overlying GCL.

The surface shall be prepared to meet the liner manufacturer's and the installer's specifications. The liner manufacturer's/installer's specifications shall consider compaction, soft areas, proof rolling, maximum grain size, rocks, and other subgrade imperfections that may affect the liner.

The liner installer shall provide written acceptance of the subgrade before installing liner on it.

(3) A lower liner consisting of geosynthetic clay liner (GCL) with a hydraulic conductivity of no more than  ~~$4 \times 10^{-9}$~~   $5 \times 10^{-9}$  cm/sec. The GCL shall have appropriate overlap between adjacent panels so as to minimize the risk of panel shrinkage ~~and/or~~ or transverse shortening creating panel separation, and be installed with a minimum 12-inch overlap on the panel ends and 6-inch overlap between adjacent panels. If the liner system will be exposed prior to the placement of a protective cover layer for periods in excess of two months, a discussion of the adequacy of the GCL overlap shall be included in the certification report. Granular bentonite shall be spread on all seams prior to placement of overlapping panels, or other means per manufacturer's specifications.

(4) An upper component consisting of a minimum 30 mil flexible membrane liner (FML). If high density polyethylene (HDPE) is used as an FML, it shall be at least 60 mil thick. The FML component shall be:

- (a) Installed in direct and uniform contact with the GCL;
- (b) Placed in accordance with an approved construction quality control/quality assurance program submitted with the design plans;
- (c) Placed with a minimum of 2.0% slope for leachate drainage; and
- (d) Leachate collection aggregate/protective cover materials shall be placed as soon as practical following the completion of the FML installation. At a minimum, this material should be placed within three months of final acceptance of the FML surface by the CQA engineer.

c. Additional alternate liner systems.

(1) Additional alternate liner systems may be approved if the owner or operator of the landfill demonstrates to the satisfaction of the director that the proposed alternate liner system design will ensure that the maximum contaminant levels (MCL) promulgated under § 1412 of the Safe Drinking Water Act (40 CFR Part 141) will not be exceeded in the uppermost aquifer at the disposal unit boundary.

(a) The demonstration shall be based on the consideration of the following factors:

- (1) The hydrogeologic characteristics of the landfill and surrounding land;
- (2) The climatic factors of the area;
- (3) The volume and physical and chemical characteristics of the leachate;
- (4) The quantity, quality, and direction of flow of groundwater;
- (5) The proximity and withdrawal rate of the groundwater users;
- (6) The availability of alternative drinking water supplies;
- (7) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater, and whether the groundwater is currently used or reasonably expected to be used for drinking water;
- (8) Public health, safety, and welfare effects; and
- (9) Practicable capability of the owner or operator.

(b) The demonstration shall be supported by the results of a mathematical modeling study based on the EPA MULTIMED model.<sup>1</sup> Other models may be used if accompanied by justification describing the reasons for inapplicability of the MULTIMED model.<sup>2</sup>

<sup>1</sup>Sharp-Hansen, S., C. Travers, P. Hummel, T. Allison, R. Johns, and W. B. Mills. A Subtitle D Landfill Application Manual for the Multimedia Exposure Assessment Model (MULTIMED 2.0), United States Environmental Protection Agency, Athens, Georgia, 1995.

<sup>2</sup>For a listing and review of models see Travers, C.L., and S. Sharp-Hansen, Leachate Generation and Migration at Subtitle D Facilities: A Summary and Review of Processes and Mathematical Models, United States Environmental Protection Agency, Environmental Research Laboratory, Athens, Georgia (1991).

## 2. CDD and industrial landfills.

All landfills shall be underlain by a liner system as follows:

a. Compacted clay:

- (1) A liner consisting of at least one-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec.
- (2) The liner shall be placed with a minimum of 2.0% slope for leachate drainage.
- (3) The liner shall be covered with a minimum one-foot thick drainage layer.

b. Synthetic liners:

(1) Synthetic liner consisting of a minimum 30 mil thick flexible membrane. If high density polyethylene is used, it shall be at least 60 mil thick. Synthetic liners shall be proven to be compatible with the solid waste and its leachate.

(2) The liner shall be placed in accordance with an approved construction quality ~~control~~/quality control or quality assurance program submitted with the design plans.

(3) The surface under the liner shall be a smooth rock-free base or otherwise prepared to prevent liner failure.

(4) The liner shall be placed with a minimum of 2.0% slope for leachate drainage.

(5) The liner shall be covered with a 12-inch thick drainage layer for leachate removal and a six-inch thick protective layer placed above the drainage layer, both composed of materials with a hydraulic conductivity of  $1 \times 10^{-3}$  cm/sec or greater (lab tested).

c. Other liners:

(1) Other augmented compacted clays or soils may be used as a liner provided the thickness is equivalent and the hydraulic conductivity will be equal to or less than that for compacted clay alone.

(2) The effectiveness of the proposed augmented soil liner shall be documented by using laboratory tests.

(3) The liner shall be placed with a minimum of 2.0% slope for leachate drainage.

d. In-place soil:

(1) Where the landfill will be separated from the groundwater by low hydraulic conductivity soil as indicated by laboratory tests, which is natural and undisturbed, and provides equal or better performance in protecting groundwater from leachate contamination, a liner can be developed by manipulation of the soil to form a liner with equivalent thickness and hydraulic conductivity equal to or less than that of the clay liner.

(2) The liner shall be prepared with a minimum of 2.0% slope for leachate drainage. Interior liner slopes of 33% will be allowed provided that adequate runoff and erosion controls are established. All interior slopes shall be supported by necessary calculations and included in the design manual.

e. Double liners required or used in lieu of groundwater monitoring shall include:

(1) Base preparation to protect the liner.

(2) A bottom or secondary liner that is soil, synthetic, or augmented soil as indicated in subdivision 2 a, b, c, or d of this subsection.

(3) A witness or monitoring zone placed above the bottom or secondary liner consisting of a 12-inch thick drainage layer composed of material with a hydraulic conductivity of  $1 \times 10^{-3}$  cm/sec or greater (lab tested) with a network of perforated pipe, or an equivalent design.

(4) The primary liner as indicated in subdivision 2 a, 2 b, or 2 c of this subsection.

(5) The primary liner will be covered with a minimum 12-inch thick drainage layer and a six-inch thick protective layer, placed above the drainage layer, both composed of materials having a hydraulic conductivity of  $1 \times 10^{-3}$  cm/sec or greater (lab tested).

(6) A program for monitoring the witness zone shall be established. The program will monitor the quantity and quality of liquids collected from this zone and shall be designed to detect waste constituents most likely associated with the waste accepted at the landfill. The program will also establish a leakage action rate beyond which groundwater contamination will be assessed through a groundwater monitoring program in accordance with 9VAC20-81-250.

f. If five-foot separation from seasonal high ground water can be demonstrated, a separate area may be established to receive only stumps, brush, leaves, and land-clearing debris. Such an area may be constructed without a liner or a leachate collection system, but may not receive any other solid waste.

~~K.~~ L. Each site design shall include a decomposition gas venting system or gas management system (see 9VAC20-81-200), except at CDD and industrial landfills if the owner or operator can demonstrate to the department that gas formation is not a concern.

~~L.~~ M. Leachate control and monitoring systems are subject to the requirements in 9VAC20-81-210.

~~M.~~ N. A groundwater monitoring system shall be installed at all landfills in accordance with 9VAC20-81-250, except for the exemption of double-lined CDD or industrial landfills referenced in this section.

~~N.~~ O. Final contours of the finished landfill shall be specified. Design of final contours shall consider subsequent site uses, existing natural contours, surface water management requirements, and the nature of the surrounding area. The final elevation of the landfill shall be limited by the structural capacity of the liner and leachate collection and removal system and by stability of foundation and slopes. The final

contour shall not cause structural damage or collapse of the leachate collection system.

~~Q. P.~~ Finished side slopes shall be designed as set forth in 9VAC20-81-160 ~~D E 3 of this part.~~

~~P. Q.~~ All landfills shall be constructed in accordance with approved plans, which shall not be subsequently modified without approval by the department.

~~Q. R.~~ Construction quality assurance program.

1. General.

a. A construction quality assurance (CQA) program is required for all landfill units. The program shall ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program shall be developed and implemented under the direction of a CQA officer who is a professional engineer.

b. The CQA program shall address the following physical components, where applicable:

(1) Foundations;

(2) Low-hydraulic conductivity soil liners;

(3) Synthetic membrane liners;

(4) Leachate collection and removal systems including an 18-inch protective layer;

(5) Gas management components; and

(6) Final cover systems.

2. Written CQA plan. The owner or operator shall develop and implement a written CQA plan that shall include observations, inspections, tests, and measurements. The plan shall identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan shall include:

a. Identification of applicable units, and a description of how they will be constructed;

b. Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications;

c. A description of inspection and sampling activities for all unit components identified in subdivision 1 b of this ~~section~~ subsection including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description shall cover sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials and constructed components; plans for implementing corrective measures; and data or other information to be recorded;

d. Structural stability and integrity of all components of the unit identified in subdivision 1 b of this subsection;

e. Proper construction of all components of the liners, leachate collection and removal system, gas management system if required under subsection K of this section, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

f. Conformity of all materials used with design and other material specifications;

g. The permeability of the soil liner.

(1) The ability of the soil to be used as a liner material must be demonstrated using a test pad. At least one test pad shall be required for every source of low permeability liner soil. If soil sources are consistent (i.e. similar USCS soil type, liquid and plastic limits, grain size distribution, moisture density relationship, and permeability characteristics) one test pad will be adequate provided that the third-party quality control firm agrees. In the event that soils are not uniform within a borrow source an additional test pad shall be constructed for each soil type.

The test pad shall establish the range of criteria (compaction, moisture content, USCS classification, and grain size) that can be expected to achieve a low permeability soil liner meeting the requirements of the permit. To achieve these results the test pad's permeability shall be correlated with grain size analysis, liquid and plastic limits, moisture content, relative compaction, remolded permeability, undisturbed Shelby tube sample permeability, and the in-situ permeability determined by field tests performed on the test pad.

(2) Following the completion of the test pad the remaining low permeability liner system shall be certified by testing the constructed liner to determine its conformance to the acceptable criteria established during the test pad construction. Such tests shall include compaction, moisture content, grain size, and the liquid and plastic limits of the soil. Any area that does not conform to the established criteria shall be further tested by obtaining an undisturbed Shelby tube sample of the constructed liner and performing a laboratory permeability on it. In addition to testing any

liner areas that do not conform to the established test pad acceptance criteria, a minimum of one additional laboratory permeability test shall be performed on each acre of constructed liner.

3. Certification. Once construction is complete, the owner or operator shall submit to the department by certified mail or other equivalent method with a return receipt or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of this section. Documentation supporting the CQA officer's certification shall be submitted to the department upon request. An additional professional engineer's certification is required under the provisions of 9VAC20-81-490 A. Wastes shall not be accepted until the facility receives a Certificate to Operate (CTO) per 9VAC20-81-490 A.

#### **9VAC20-81-140. Operation requirements.**

A. The operation of all sanitary, CDD, and industrial landfills shall be governed by the standards set forth in this section. Landfill operations ~~will~~ shall be detailed in an operations manual ~~that shall be maintained in the operating record in accordance with 9VAC20-81-485. This operations manual will include an operations plan, an inspection plan, a health and safety plan, an unauthorized waste control plan, an emergency contingency plan, and a landscaping plan meeting the requirements of this section and 9VAC20-81-485. This manual shall be made available to the department when requested. If~~ The facility shall operate in accordance with this manual, and if the applicable standards of this chapter and the landfill's Operations Manual conflict, this chapter shall take precedence.

#### A B. Landfill operational performance standards.

1. The facility shall operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators.

4. 2. Safety hazards to operating personnel shall be controlled through an active safety program consistent with the requirements of 29 CFR Part 1910, as amended.

2. 3. A groundwater monitoring program meeting the requirements of 9VAC20-81-250 shall be implemented, as applicable.

3. 4. A corrective action program meeting the requirements of 9VAC20-81-260 is required whenever the groundwater protection standard is exceeded at statistically significant levels.

4. 5. Open burning and fire control at active landfills.

a. Owners or operators shall ensure that the units do not violate any applicable requirements developed by the State Air Pollution Control Board or promulgated by the EPA administrator pursuant to § 110 of the Clean Air Act, as amended (42 USC §§ 7401 to 7671q).

b. Open burning of solid waste, except for infrequent burning of agricultural wastes, silvicultural wastes, land-clearing debris, diseased trees, or debris from emergency cleanup operations is prohibited. There shall be no open burning permitted on areas where solid waste has been disposed of or is being used for active disposal. Open burning shall be limited to five days per quarter. Facilities located in volatile organic compound emissions control areas as designated by 9VAC5-20-206 shall not burn from May 1 through September 30.

c. ~~The owner or operator shall be responsible for extinguishing any fires that may occur at the facility in accordance with the facility's fire control plan. A fire control plan will be developed that outlines the response of facility personnel to fires. The fire control plan will be provided as an attachment to the emergency contingency plan required under the provisions of 9VAC20-81-485. The fire control plan will be available for review upon request by the public. There shall be no open burning permitted on areas where solid waste has been disposed or is being used for active disposal. Fires shall be effectively controlled and extinguished as soon as possible. Landfill fire control shall include application of sufficient soil or other fire suppression materials (e.g., water or foam) as appropriate.~~

d. A fire control plan shall be developed that outlines the response of facility personnel to fires. The fire control plan shall be provided as an attachment to the emergency contingency plan required under the provisions of 9VAC20-81-485. The fire control plan shall be available for review upon request by the public.

e. The owner or operator of an active landfill shall train staff to recognize fire hazards and respond to fires in accordance with the facility's fire control plan. Refresher training on the procedures in the fire control plan shall be provided to staff on an annual basis (at least once every 12 months).

5. 6. Except as provided in 9VAC20-81-130 ~~K~~ L, owners or operators shall implement a gas management plan in accordance with 9VAC20-81-200 to control landfill gas such that:

a. The concentration of methane gas generated by the landfill does not exceed 25% of the lower explosive limit for methane (1.25% methane by volume) in landfill structures (excluding gas control or recovery system components); and

b. The concentration of methane gas does not exceed the lower explosive limit for methane at (5.0% methane by volume) within the facility [ ~~boundary-~~ gas monitoring network. ]

~~6.~~ 7. Landfills shall not:

a. Allow leachate from the landfill to drain or discharge into surface waters except when treated onsite and discharged into surface water as authorized under a VPDES Permit (9VAC25-31).

b. Cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Clean Water Act (33 USC § 1251 et seq.), including, ~~but not limited to,~~ the VPDES requirements and Virginia Water Quality Standards (9VAC25-260).

c. Cause the discharge of a nonpoint source of pollution to waters of the United States, including wetlands, that violates any requirement of an areawide or statewide water quality management plan that has been approved under § 208 or 319 of the Clean Water Act (33 USC § 1251 et seq.), as amended or violates any requirement of the Virginia Water Quality Standards (9VAC25-260).

d. Allow solid waste to be deposited in or to enter any surface waters or groundwaters.

e. Allow solid waste to be placed outside the constructed disposal unit boundary or above the vertical design capacity, except as may be separately permitted or approved in writing by DEQ for exigent or emergency situations.

~~7.~~ 8. Owners or operators shall maintain the ~~run-on/runoff~~ run-on and runoff control systems designed and constructed in accordance with 9VAC20-81-130 H I.

~~8.~~ 9. Access to sanitary, CDD, or noncaptive industrial landfills shall be permitted only when an attendant is on duty and only during daylight hours, unless otherwise specified in the landfill permit.

~~9.~~ 10. Fencing or other suitable control means shall be used to control litter migration. All litter blown from the landfill operations shall be collected on a weekly basis.

~~10.~~ 11. Odors and vectors shall be effectively controlled so they do not constitute nuisances or hazards. Odor hazard or nuisances shall be controlled in accordance with 9VAC20-81-200 D E. Disease vectors shall be controlled using techniques for the protection of human health and the environment.

~~11.~~ 12. If salvaging is allowed by a landfill, it shall not interfere with operation of the landfill and shall not create hazards or nuisances.

~~12.~~ 13. Fugitive dust and mud deposits on main offsite roads and access roads shall be minimized at all times to limit nuisances. Dust shall be controlled to meet the requirements of Article 1 (9VAC5-40-60 et seq.) of Part II of 9VAC5-40.

~~13.~~ 14. Internal roads in the landfill shall be maintained to be passable in all weather by ordinary vehicles. All operation areas and units shall be accessible, including the access roads or paths to monitoring locations.

~~14.~~ 15. All landfill ~~appurtenances~~ infrastructure listed in 9VAC20-81-130 shall be properly maintained and operated as designed and approved in the facility's permit.

~~15.~~ 16. Adequate numbers and types of properly maintained equipment shall be available to a landfill for operation. Provision shall be made for substitute equipment to be available or alternate means implemented to achieve compliance with subdivision B 1, C 1, or D 1 of this section, as applicable, within 24 hours should the former become inoperable or unavailable. Operators with training appropriate to the tasks they are expected to perform and in sufficient numbers for the complexity of the site shall be on the site whenever it is in operation.

~~16.~~ ~~Self-Inspection~~ 17. Self-inspection. Each landfill shall implement an inspection routine including a schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of this chapter. Records of these inspections must be maintained in the operating record and available for review. At a minimum, the following aspects of the facility shall be inspected on at least a monthly basis: erosion and sediment controls, storm water conveyance system, leachate collection system, leachate seep control, safety and emergency equipment, internal roads, and operating equipment. The groundwater monitoring system and gas management system shall be inspected at a rate consistent with the system's monitoring frequency. Records must include the date and time of the inspection; the name of the inspector; a description of the inspection, including the identity of specific equipment and structures inspected; the observations recorded; and the date and nature of any remedial actions implemented or repairs made as a result of the inspection.

~~17.~~ 18. Records to include, at a minimum, date of receipt, quantity by weight or volume, and origin shall be maintained on solid waste received and processed to fulfill the applicable requirements of the Solid Waste Information and Assessment Program under 9VAC20-81-80 and the Control Program for Unauthorized Waste under 9VAC20-81-100 E. Such records shall be made available to

the department for examination or use when requested.

19. The facility shall operate within the hours of operation specified in the permit. The facility may request a temporary extension of operating hours [ : ] if necessary [ . ] in order to respond to an emergency or other unusual event.

20. The facility shall not exceed the daily disposal limit or waste storage limits specified in the permit. The facility may request a temporary increase in daily disposal limit or waste storage limits [ . ] if necessary [ . ] in order to respond to an emergency or other unusual event.

21. Topographic survey. Each landfill with a permitted daily disposal limit of more than 300 tons per day shall perform a topographic survey of the active portion of the landfill on an annual basis (at least once every 12 months). Each landfill with a permitted daily disposal limit of 300 tons per day or less shall perform a topographic survey of the active portion of the landfill on a biennial basis (at least once every 24 months). The survey shall be certified by a professional engineer or certified land surveyor licensed in the Commonwealth of Virginia, unless exempt pursuant to § 54.1-402 of the Code of Virginia. The survey results shall be compared to the landfill permit's final site topography plan. Within 90 days of the survey, the landfill shall submit to the department a drawing comparing surveyed elevations, permitted final elevations, and the disposal unit boundary. The drawing shall note areas that have reached final elevation or lateral extent, and any areas of overfill (waste outside the constructed disposal unit boundary or above the vertical design capacity) including an estimate of total area and volume of overfill. The remaining capacity and estimated life within the permitted disposal unit boundary shall also be included as part of the submittal.

B- C. In addition to the standards in subsection A of this section, sanitary landfills shall also comply with the following:

1. Compaction and cover requirements.

a. Unless provided otherwise in the permit, solid waste shall be spread into two-foot layers or less and compacted at the working face, which shall be confined to the smallest area practicable as determined by the tipping demand for unloading.

b. Lift heights shall be sized in accordance with daily waste volumes. Lift height is not recommended to exceed 10 feet.

c. Daily cover consisting of at least six inches of compacted soil or other approved material shall be placed upon and maintained on all exposed solid waste prior to the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging, and [ minimize ] stormwater infiltration. Alternate materials of an alternate thickness may be approved by the department if it has been demonstrated that the alternate material and thickness control disease vectors, fires, odors, blowing litter, and scavenging, and [ minimize ] stormwater infiltration, without presenting a threat to human health and the environment. At least three days of acceptable cover soil or approved material at the average usage rate shall be maintained at the landfill or readily available at all times. Alternate daily cover shall be applied in accordance with the site-specific conditions approved by the department. The use of an alternate daily cover shall cease if it is not effective in controlling disease vectors, fires, odors, blowing litter, scavenging, and [ minimizing ] stormwater infiltration; [ if the use of the material results in nuisances; ] or if the material erodes and results in waste being exposed.

d. If the landfill accepts asbestos-containing waste material for disposal, the waste shall be covered upon receipt in accordance with the requirements of 9VAC20-81-620 C.

e. At least three days of acceptable cover soil or approved material at the average usage rate shall be maintained as close as practicable to the landfill working face and readily available at all times to ensure materials can be accessed and applied during inclement weather conditions and to facilitate a timely response to any landfill fires should they occur.

~~d.~~ f. Intermediate cover of at least six inches of additional compacted soil shall be applied and maintained whenever an additional lift of refuse is not to be applied within 30 days. Intermediate cover shall be graded to prevent ponding and [ accelerate ] [ promote ] surface runoff in order to minimize infiltration of water into solid waste cells. Further, all areas with intermediate cover exposed shall be inspected as needed, but not less than weekly. Additional cover material shall be placed on all cracked, eroded, and uneven areas as required to maintain the integrity of the intermediate cover system.

e. g. Final cover construction will be initiated and maintained in accordance with the requirements of 9VAC20-81-160 ~~D~~ E 2 when the following pertain:

(1) An additional lift of solid waste is not to be applied within one year, or a longer period as required by the facility's phased development.

(2) Any area of a landfill attains final elevation and within 90 days after such elevation is reached

or longer if specified in the landfill's approved closure plan.

(3) An entire landfill's permit is terminated for any reason, and within 90 days of such denial or termination.

f. h. Vegetation shall be established and maintained on all exposed final cover material within four months after placement, or as specified by the department when seasonal conditions do not permit. Mowing will be conducted a minimum of once a year or ~~at a frequency more frequent as~~ suitable for the vegetation and climate. Unless the approved final cover design includes the use of woody vegetation, the facility shall prevent establishment of woody vegetation and control vegetative height in order to maintain the integrity of the final cover and allow for access and adequate inspection of cover and other landfill infrastructure. The facility shall make repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events.

g. i. Areas where waste has been disposed that have not received waste within 30 days will not have slopes exceeding the final cover slopes specified in the permit or 33% unless steeper slopes are approved in the permit.

~~2. The active working face of a sanitary landfill shall be kept as small as practicable, determined by the tipping demand for unloading.~~

~~3. 2.~~ A sanitary landfill that is located within 10,000 feet of any airport runway used for turbojet aircraft or 5,000 feet of any airport runway used by only piston type aircraft, shall operate in such a manner that the landfill does not increase or pose additional bird hazards to aircraft.

~~4. 3.~~ Sanitary landfills shall not dispose of the following wastes, except as specifically authorized by the landfill permit or by the department:

a. Free liquids.

(1) Bulk or noncontainerized liquid waste, unless:

(a) The waste is household waste; or

(b) The waste is gas condensate derived from that landfill;

(c) The waste is leachate derived from that landfill and the landfill is designed with a composite liner and leachate collection system as described in 9VAC20-81-130 ~~↓ K~~ 1 a and 9VAC20-81-130 ~~↓ M~~; or

(2) Containers holding liquid waste, unless:

(a) The container is a small container similar in size to that normally found in household waste;

(b) The container is designed to hold liquids for use other than storage; or

(c) The waste is household waste.

b. Regulated hazardous wastes as defined by the Virginia Hazardous Waste Management Regulations (9VAC20-60).

c. Solid wastes, residues, or soils containing more than 1.0 ppb (parts per billion) TEF (dioxins).

d. Solid wastes, residues, or soils containing 50.0 ppm (parts per million) or more of PCB's except as allowed under the provisions of 9VAC20-81-630.

e. Sludges that have not been dewatered.

f. Contaminated soil unless approved by the department in accordance with the requirements of 9VAC20-81-610 or 9VAC20-81-660.

g. Regulated medical waste as specified in the Regulated Medical Waste Management Regulations (9VAC20-120).

~~5. 4.~~ Chloroflourocarbons, hydrochlorofluorocarbons, and PCBs must be removed from white goods prior to placement on the working face.

~~6. D.~~ In addition to the standards in subsection A ~~B~~ of this section, ~~Construction/demolition/debris construction/demolition/debris~~ landfills shall also comply with the following:

1. Compaction and cover requirements.

a. Waste materials shall be compacted in shallow layers during the placement of disposal lifts to minimize differential settlement.

b. Compacted soil cover shall be applied as ~~needed for safety and aesthetic purposes necessary to control fires, odors, blowing litter, and [ minimize ]~~ stormwater infiltration. A minimum one-foot thick progressive cover shall be maintained weekly such that the top of the lift is fully covered at the end of the work week. If the landfill accepts Category I or II nonfriable asbestos-containing material for disposal, ~~daily soil cover shall be placed upon all exposed Category I or II nonfriable asbestos-containing material prior to the end of each operating day.~~ the waste shall be covered upon receipt in accordance with the requirements of 9VAC20-81-620

~~C.~~ The open working face of a landfill shall be kept as small as practicable, determined by the

tipping demand for unloading.

c. At least three days of acceptable cover soil shall be maintained as close as practicable to the landfill working face and readily available at all times to ensure materials can be accessed and applied during inclement weather conditions, and to facilitate a timely response to any landfill fires, should they occur.

~~e~~ d. When waste deposits have reached final elevations, or disposal activities are interrupted for 15 days or more, waste deposits shall receive a one-foot thick intermediate cover unless soil has already been applied in accordance with subdivision 1 b of this subsection and be graded to prevent ponding and to [ accelerate ] [ promote ] surface ~~run-off~~ runoff in order to minimize infiltration of water into solid waste cells. Further, all areas with intermediate cover exposed shall be inspected as needed but not less than weekly and additional cover material shall be placed on all cracked, eroded, and uneven areas as required to maintain the integrity of the intermediate cover system.

~~d~~ e. Final cover construction will be initiated and maintained in accordance with the requirements of 9VAC20-81-160 ~~D~~ E 2 when the following pertain:

(1) An additional lift of solid waste is not to be applied within one year, or a longer period as required by the facility's phased development.

(2) Any area of a landfill attains final elevation and within 90 days after such elevation is reached or longer if specified in the landfill's approved closure plan.

(3) An entire landfill's permit is terminated for any reason, and within 90 days of such denial or termination.

e. f. Vegetation shall be established and maintained on all exposed final cover material within four months after placement, or as specified by the department when seasonal conditions do not permit. Mowing will be conducted a minimum of once a year or at a frequency more frequent as suitable for the vegetation and climate. Unless the approved final cover design includes the use of woody vegetation, the facility shall prevent establishment of woody vegetation and control vegetative height in order to maintain the integrity of the final cover and allow for access and adequate inspection of cover and other landfill infrastructure. The facility shall make repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events.

f. g. Areas where waste has been disposed that have not received waste within 30 days will not have slopes exceeding the final cover slopes specified in the permit or 33%.

2. Chlorofluorocarbons, hydrochlorofluorocarbons, and PCBs must be removed from white goods prior to placement on the working face.

~~D~~ E. In addition to the standards in subsection A of this section, Industrial Landfills shall also comply with the following:

1. Compaction and cover requirements.

a. Unless provided otherwise in the permit, solid waste shall be spread and compacted at the working face, which shall be confined to the smallest area practicable.

b. Lift heights shall be sized according to the volume of waste received daily and the nature of the industrial waste. A lift height is not required for materials [ such as fly ash ] that are not compactable.

~~c. Where it is necessary for the specific waste, such as Category I or II nonfriable asbestos-containing material, daily soil cover, or other suitable material shall be placed upon all exposed solid waste prior to the end of each operating day. For wastes such as fly ash and bottom ash from burning of fossil fuels, periodic cover to minimize exposure to precipitation and control dust or dust control measures such as surface wetting or crusting agents shall be applied. At least three days of acceptable cover soil or approved material at the average usage rate shall be maintained at the fill at all times at facilities where daily cover is required unless an offsite supply is readily available on a daily basis.~~

c. Cover consisting of at least six inches of compacted soil shall be placed upon all exposed solid waste at a minimum of once a week, unless the owner or operator demonstrates to the satisfaction of the department that alternate methods are effective to control fires, odors, blowing litter, [ minimize ] stormwater infiltration, and prevent erosion and displacement of waste. Requests to use alternate methods shall be submitted to the department in writing. Alternate methods shall be specific to the type, nature, and quantity of wastes disposed and may include an alternate weekly cover material, alternate frequency for cover soil application, or other site-specific strategies to control fires, odors, and blowing litter, to minimize infiltration of water into solid waste cells, and to prevent erosion and displacement of waste. Alternate methods shall be utilized in accordance with the site-specific conditions approved by the department. The use of an alternate method shall cease if it is not effective in controlling fires, odors, blowing litter, and[

minimizing stormwater infiltration; if it is not effective in preventing erosion and displacement of waste; [ if the use of the material results in nuisances; ] or if the method presents a threat to human health and the environment.

d. If the landfill accepts asbestos-containing waste material for disposal, the waste shall be covered upon receipt in accordance with the requirements of 9VAC20-81-620 C.

e. At least three days of acceptable cover soil or approved material at the average usage rate shall be maintained as close as practicable to the landfill working face and readily available at all times to ensure materials can be accessed and applied during inclement weather conditions, and to facilitate a timely response to any landfill fires, should they occur.

d. f. Intermediate cover of at least one foot of compacted soil shall be applied whenever an additional lift of refuse is not to be applied within 30 days unless the owner or operator demonstrates to the satisfaction of the director that an alternate cover material or an alternate schedule will be protective of public health and the environment. In the case of facilities where fossil fuel combustion products are removed for beneficial use, intermediate cover must be applied in any area where ash has not been placed or removed for 30 days or more. Intermediate cover shall be graded to prevent ponding and [ accelerate ] [ promote ] surface runoff in order to minimize infiltration of water into solid waste cells. Further, all areas with intermediate cover exposed shall be inspected as needed but not less than weekly and additional cover material shall be placed on all cracked, eroded, and uneven areas as required to maintain the integrity of the intermediate cover system.

eg. Final cover construction will be initiated in accordance with the requirements of 9VAC20-81-160 D E 2 when the following pertain:

(1) When an additional lift of solid waste is not to be applied within two years or a longer period as required by the facility's phased development.

(2) When any area of a landfill attains final elevation and within 90 days after such elevation is reached or longer if specified in the landfill's approved closure plan.

(3) When a landfill's permit is terminated within 90 days of such denial or termination.

f. h. Vegetation shall be established and maintained on all exposed final cover material within four months after placement, or as otherwise specified by the department when seasonal conditions do not otherwise permit. Mowing will be conducted a minimum of once a year or at a frequency more frequent as suitable for the vegetation and climate. Unless the approved final cover design includes the use of woody vegetation, the facility shall prevent establishment of woody vegetation and control vegetative height in order to maintain the integrity of the final cover and allow for access and adequate inspection of cover and other landfill infrastructure. The facility shall make repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events.

2. Incinerator and air pollution control residues containing no free liquids shall be incorporated into the working face and covered at such intervals as necessary to minimize them from becoming airborne. Dust control measures such as surface wetting, crusting agents, or other strategies shall be utilized in a manner and frequency suitable to control dust from other wastes that could become airborne, such as fly ash and bottom ash from burning of fossil fuels.

### **9VAC20-81-160. Closure requirements.**

A. The closure of all sanitary, CDD and industrial landfills shall be governed by the standards set forth in this section.

A. B. Closure purpose. The owner or operator shall close the landfill in a manner that minimizes the need for further maintenance and provides for the protection of human health and the environment. Closure shall eliminate the ~~post-closure~~ post-closure escape of uncontrolled leachate or of waste decomposition products to the groundwater or surface water to the extent necessary to protect human health and the environment. Closure shall also control ~~and/or~~ or minimize surface runoff and the escape of waste decomposition products to the atmosphere.

B. C. Closure plan and modification of plan.

1. The owner or operator of a solid waste disposal facility shall have a written closure plan. This plan shall identify the steps necessary to completely close the landfill at the time when the operation will be the most extensive and at the end of its intended life. The closure plan shall include, at least:

a. A schedule for final closure that shall include, as a minimum, the anticipated date when wastes will no longer be received, the date when completion of final closure is anticipated, and intervening milestone dates that will allow tracking of the progress of closure-;

b. An estimate of waste disposed onsite over the active life of the landfill;

c. An estimate of the largest area ever requiring a final cover as required at any time during the

active life;

d. Description of Final Cover System design in accordance with subsection D of this section;

e. Description of storm water management to include design, construction, and maintenance controls; and

f. Closure cost estimate in accordance with 9VAC20-70-111 and 9VAC20-70-112, to include removal costs associated with any stockpiles of material for beneficial use for the purpose of financial assurance.

2. The owner or operator may amend the closure plan at any time during the active life of the landfill. The owner or operator shall so amend his plan any time changes in operating plans or landfill design affect the closure plan. The amended closure plan shall be placed in the operating record and a copy provided to the department.

3. Closure plans and amended closure plans not previously approved by the director shall be submitted to the department at least 180 days before the date the owner or operator expects to begin construction activities related to closure. The director will approve or disapprove the plan within 90 days of receipt.

4. If the owner or operator intends to use an alternate final cover design, he shall submit a proposed design meeting the requirements of subdivision ~~D~~ E 2 f of this section to the department at least 180 days before the date he expects to begin closure. The department will approve or disapprove the plan within 90 days of receipt.

5. At least 180 days prior to beginning closure of each solid waste disposal unit, the owner or operator shall notify the department and the solid waste planning unit of the intent to close.

~~G~~ D. Time allowed for closure.

1. The owner or operator shall begin closure activities of each unit no later than 30 days after the date on which the unit receives the known final receipt of wastes or, if the unit has remaining capacity and there is a reasonable likelihood that the unit will receive additional wastes, no later than one year after the most recent receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the director if the owner or operator demonstrates that the unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed unit.

2. The owner or operator shall complete closure activities of each unit in accordance with the closure plan and within six months after receiving the final volume of wastes. The director may approve a longer closure period if the owner or operator can demonstrate that the required or planned closure activities will, of necessity, take longer than six months to complete; and that he has taken all steps to eliminate any significant threat to human health and the environment from the unclosed but inactive landfill.

~~D~~ E. Closure implementation.

1. The owner or operator shall close each unit with a final cover as specified in subdivision 2 of this subsection, grade the fill area to prevent ponding, and provide a suitable vegetative cover. Vegetation shall be deemed properly established when there are no large areas void of vegetation and it is sufficient to control erosion.

2. Final cover system.

a. The owner or operator shall install a final cover system that is designed to achieve the performance requirements of this section.

b. Owners or operators of CDD landfill units used for the disposal of wastes consisting only of stumps, wood, brush, and leaves from ~~landclearing~~ land-clearing operations may apply two feet of compacted soil as final cover material in lieu of the final cover system specified in this section. The provisions of this section shall not be applicable to any landfill with respect to which the director has made a finding that continued operation of the landfill constitutes a threat to the public health or the environment.

c. The final cover system shall be designed and constructed to:

(1) Minimize infiltration through the closed disposal unit by the use of an infiltration layer that is constructed of at least 18 inches of earthen material; and ~~which that~~ has a hydraulic conductivity less than or equal to the hydraulic conductivity of any bottom liner system or natural subsoils present, or a hydraulic conductivity no greater than  $1 \times 10^{-5}$  cm/sec, whichever is less; and

(2) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth, and provide for protection of the infiltration layer from the effects of erosion, frost, and wind.

d. The owner or operator of a sanitary landfill may choose to use this alternate final cover

system, which shall consist of at least the following components:

- (1) An 18-inch soil infiltration layer with a hydraulic conductivity no greater than  $1 \times 10^{-5}$  cm/sec or a geosynthetic clay liner installed over the intermediate cover;
- (2) A barrier layer consisting of a geosynthetic membrane having a minimum thickness of 40-mils;
- (3) A protective cover layer for protection of the barrier and infiltration layer layers from the effects of erosion, frost, and wind, and consisting of a minimum of 18 inches of soil; and
- (4) A vegetative support layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

e. The owner or operator of a CDD or industrial landfill may choose to use this alternate final cover system, which shall consist of at least the following components:

- (1) A barrier layer consisting of a geosynthetic clay liner or a geosynthetic membrane having a minimum thickness of 40 mils (or 30 mils if using PVC);
- (2) A protective cover layer for protection of the ~~infiltration~~ barrier layer from the effects of erosion, frost, and wind, and consisting of a minimum of 18 inches of soil; and
- (3) A vegetative support layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

f. The director may approve an alternate final cover design that includes:

- (1) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in subdivision 2 c (1) of this subsection; and
- (2) A minimum 24-inch erosion layer that is capable of sustaining native plant growth and provide for protection of the infiltration layer from the effects of erosion, frost, and wind.

3. Finished side slopes shall be stable and be configured to adequately control erosion and runoff. Slopes of 33% will be allowed provided that adequate runoff controls are established. Steeper slopes may be considered if supported by necessary stability calculations and appropriate erosion and runoff control features. All finished slopes and runoff management facilities shall be supported by necessary calculations and included in the design manual. To prevent ponding of water, the top slope shall be at least 2.0% after allowance for settlement.

4. Following construction of the final cover system for each unit, the owner or operator shall submit to the department a certification, signed by a professional engineer verifying that closure has been completed in accordance with the closure plan requirements of this part. ~~This certification shall include the results of the CQA/QC requirements under 9VAC20-81-130 Q 1 b (6).~~ A separate certification signed by the CQA officer that the CQA plan has been successfully carried out shall be provided. Documentation supporting the CQA officer's certification shall be submitted to the department.

5. Following the closure of all units the owner or operator shall:

- a. Post one sign at the entrance of the landfill notifying all persons of the closing, and the prohibition against further receipt of waste materials. Further, suitable barriers shall be installed at former accesses to prevent new waste from being deposited.
- b. Within 90 days after closure is completed, submit to the local land recording authority a survey plat prepared by a professional land surveyor registered by the Commonwealth or a person qualified in accordance with Title 54.1 of the Code of Virginia indicating the location and dimensions of landfills. Groundwater monitoring well and landfill gas monitoring probe locations shall be included and identified by the number on the survey plat. The plat filed with the local land recording authority shall contain a note, prominently displayed, which states the owner's or operator's future obligation to restrict disturbance of the site as specified.
- c. Record a notation on the deed to the landfill property, or on some other instrument which is normally examined during title searches, notifying any potential purchaser of the property that the land has been used to manage solid waste and its use is restricted under 9VAC20-81-170 A B 2 c. A copy of the deed notation as recorded shall be submitted to the department.
- d. Submit to the department a certification, signed by a professional engineer, verifying that closure has been completed in accordance with the requirements of subdivisions 5 a, b, and c of this subsection and the landfill closure plan.

6. The department shall inspect all solid waste management facilities at the time of closure to confirm that the closing is complete and adequate. It shall notify the owner or operator of a closed landfill, in writing, if the closure is satisfactory, and shall require any construction or such other steps necessary to bring unsatisfactory sites into compliance with these regulations. Notification by the department that the closure is satisfactory does not relieve the owner or operator of responsibility for corrective action to prevent or abate problems caused by the landfill.

**9VAC20-81-170. ~~Postclosure~~ Post-closure care requirements.**

~~A.~~ The ~~postclosure~~ post-closure of all sanitary, CDD, and industrial landfills shall be governed by the standards as set forth in this section.

~~A.~~ Postclosure ~~B.~~ Post-closure care requirements.

1. Following closure of the landfill, the owner or operator shall conduct ~~postclosure~~ post-closure care of the landfill. ~~Postclosure~~ Post-closure care shall consist of at least the following:

a. Maintaining the integrity and effectiveness of any final cover, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and ~~run-off~~ runoff from eroding or otherwise damaging the final cover. Mowing will be conducted a minimum of once a year or more frequent as suitable for the vegetation and climate. Unless the approved final cover design includes the use of woody vegetation, the facility shall prevent establishment of woody vegetation and control vegetative height in order to maintain the integrity of the final cover and allow for access and adequate inspection of cover and other landfill infrastructure;

b. Maintaining and operating the leachate collection system, as applicable, in accordance with the requirements in 9VAC20-81-210. The director may allow the owner or operator to stop managing leachate if the owner or operator demonstrates that leachate no longer poses a threat to human health and the environment;

c. Maintaining the groundwater monitoring system and monitoring the groundwater, as applicable, in accordance with the requirements in 9VAC20-81-250; and

d. Maintaining and operating the gas monitoring system, as applicable, in accordance with the requirements in 9VAC20-81-200.

2. The owner or operator shall prepare a written ~~postclosure~~ post-closure plan or review and revise the approved ~~postclosure~~ post-closure plan to insure that it includes, at a minimum, the following information:

a. A description of the monitoring and maintenance activities required in subdivision 1 of this subsection for the landfill, and the frequency at which these activities will be performed;

b. Name, address, and telephone number of the person or office to contact about the landfill during the ~~postclosure~~ post-closure period; ~~and~~

c. A description of the planned uses of the property during the ~~postclosure~~ post-closure period. ~~Postclosure~~ Post-closure use of the property shall not disturb the integrity of the final cover, liners, or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements of this chapter. The director may approve any other disturbance if the owner or operator demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment.; ~~and~~

d. An inspection checklist to use during the post-closure care period, which includes all applicable major aspects of facility post-closure care necessary to ensure compliance with the requirements of this chapter. Records of these inspections must be maintained in the operating record and available for review. At a minimum, the following aspects of the facility shall be inspected on at least a quarterly basis: security control devices; final cover integrity; run-on and runoff controls; and leachate collection system. The groundwater monitoring system and gas management system shall be inspected at a rate consistent with the system's monitoring frequency.

3. The owner or operator shall submit a ~~postclosure~~ post-closure care plan for review and approval by the department whenever a ~~postclosure~~ post-closure care plan has been prepared or amended. Those ~~postclosure~~ post-closure care plans that have been placed in a landfill's operating record must be reviewed and approved by the director prior to implementation.

~~B.~~ Postclosure ~~C.~~ Post-closure period.

1. Unless a landfill completes all provisions of 9VAC20-81-160 ~~D~~ E, the department will not consider the landfill closed, and the beginning of the ~~postclosure~~ post-closure care period will be postponed until all provisions have been completed. The ~~postclosure~~ post-closure care period begins on the date of the certification signed by a professional engineer as required in 9VAC20-81-160 ~~D~~ E 5 d.

2. The ~~postclosure~~ post-closure care shall be conducted:

a. For a minimum of 10 years for sanitary landfill facilities that ceased to accept wastes before October 9, 1993;

b. For a minimum of 30 years for sanitary landfill facilities that received wastes on or after October 9, 1993;

- c. For a minimum of 10 years for CDD and industrial landfill facilities; or
- d. As provided in subdivision 3 of this subsection.

3. The length of the ~~postclosure~~ post-closure care period may be decreased if the owner or operator demonstrates that the reduced period is equally protective of human health and the environment, the owner or operator submits a justifying demonstration, and the department approves this demonstration. The owner or operator shall submit this demonstration to the department for review and approval, and shall also include the following information:

- a. A certification, signed by the owner or operator and a professional engineer or professional geologist, verifying that decreasing the ~~postclosure~~ post-closure care period will be equally protective of human health and the environment.
- b. The certificate shall be accompanied by an evaluation, prepared by a professional engineer or professional geologist, assessing and evaluating the landfill's potential for increased risk to human health and the environment in the event that ~~postclosure~~ post-closure period is decreased.

4. The owner or operator will continue ~~postclosure~~ post-closure care and monitoring until such time that the department approves termination of the ~~postclosure~~ post-closure care ~~and/or~~ or monitoring activity.

~~C. Postclosure~~ D. Post-closure care termination.

1. The owner or operator may submit a request for termination of any or all portions of ~~postclosure~~ post-closure care and monitoring following completion of the ~~postclosure~~ post-closure care period (as defined in subdivision ~~B C~~ 2 of this section) for the landfill. The owner or operator shall demonstrate that termination of ~~postclosure~~ post-closure care ~~and/or~~ or monitoring ~~activity/activities~~ activity shall be protective of human health and the environment. The owner or operator shall submit this demonstration for termination to the department for review and approval, and shall also include the following information:

- a. A certification, signed by the owner or operator and a professional engineer or professional geologist, verifying that ~~postclosure~~ post-closure care has been completed in accordance with the ~~postclosure~~ post-closure plan.
- b. The certificate shall be accompanied by an evaluation, prepared by a professional engineer or professional geologist, assessing and evaluating the landfill's potential for increased risk to human health and the environment in the event that ~~postclosure~~ post-closure monitoring and maintenance are discontinued.

2. If the department does not approve termination of the ~~postclosure~~ post-closure care ~~and/or~~ or monitoring, the owner or operator shall continue ~~postclosure~~ post-closure monitoring and maintenance in accordance with the approved plan. Additionally, the owner or operator shall review and revise, as necessary, the ~~postclosure~~ post-closure plan for modifications necessary to meet the current regulatory requirements, and submit this revised plan to the department for review and approval.

3. If the department deems the certification and evaluation to be complete and technically adequate, the owner or operator will be notified of the tentative approval. The owner or operator shall then send written notice of the tentative decision to all adjacent property owners and occupants stating that post-closure care monitoring at the facility may be terminated and provide an opportunity for public participation. The notice must include:

- a. The name and location of the facility;
- b. A list of post-closure care activities to be terminated;
- c. The purpose of the public participation, which is to acquaint the public with the technical aspects of the proposal and how the standards and the requirements of this chapter will be met, to identify issues of concern, to facilitate communication, and to establish a dialogue between the permittee and persons who may be affected by the facility;
- d. Announcement of a 30-day comment period, and the name, telephone number, and address of the owner's or operator's representative who can be contacted by interested persons to answer questions or where comments shall be sent;
- e. Procedures for requesting a public meeting; and
- f. Location where copies of the documentation submitted to the department in support of the termination of post-closure activity evaluation can be viewed and copied.

4. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period shall begin no earlier than five days after written notice is sent to adjacent property owners and occupants.

5. Following the completion of the public comment period, the owner or operator must submit to the

department a certification, signed by the owner or operator, verifying that the public participation requirements have been completed, attaching a copy of the adjacent property owner notification and the names and addresses of those to whom the notices were sent. A summary of the results of public participation and the applicant's response to any comments received during the public participation shall be provided to the department. Based on a review of the public participation information, the department will either issue a final approval of termination or request additional information to address public comments prior to final approval.

~~D.~~ E. Owner or operator ~~postclosure~~ post-closure plan review.

1. The owner or operator shall review and revise, as necessary, the ~~postclosure~~ post-closure care plan for modifications to meet the current regulatory requirements and reflect the current landfill conditions when:

- a. The department does not approve the termination of all ~~postclosure~~ post-closure care monitoring and maintenance activities; or
- b. The minimum ~~postclosure~~ post-closure period has been met, and there are ongoing corrective action measures per 9VAC20-81-260 for the landfill.

2. The owner or operator shall submit this revised plan to the department for review and approval, and shall continue ~~postclosure~~ post-closure monitoring and maintenance in accordance with the approved plan.

**9VAC20-81-200. Control of decomposition gases.**

A. Owners or operators of solid waste disposal facilities shall develop a gas management plan in accordance with this section. Venting and control of decomposition gases shall be implemented for sanitary and other landfills in order to protect the landfill cap and prevent migration into facility structures or beyond the facility boundary, subject to exceptions at 9VAC20-81-130 ~~K~~ L. The contents of the plan shall also reflect the requirements contained in ~~40 CFR 60.33c and 40 CFR 60.750, (Standards of performance for new and guidelines for control of existing municipal solid waste landfills) and 9VAC5-40-5800, as applicable~~ 40 CFR Part 60 as adopted by reference in Article 5 (9VAC5-50-400 et seq.) of 9VAC5-50; 40 CFR Part 63 as adopted in Article 2 (9VAC5-60-90 et seq.) of 9VAC5-60; Article 43 (9VAC5-40-5800 et seq.) of 9VAC5-40, Emission Standards for Municipal Solid Waste Landfills; and Article 43.1 (9VAC5-40-5925 et seq.) of 9VAC5-40, Emission Standards for Municipal Solid Waste Landfills for which Construction, Reconstruction, or Modification was Commenced on or before July 17, 2014, as applicable.

~~A.~~ B. General requirements.

1. To provide for the protection of public health and safety, and the environment, the owner or operator shall ensure that decomposition gases generated at a landfill are controlled during the periods of operation, closure and ~~postclosure~~ post-closure care, in accordance with the following requirements:

- a. The concentration of methane gas generated by the landfill shall not exceed 25% of the lower explosive limit (LEL) for methane (1.25% methane by volume) in landfill structures (excluding gas control or recovery system components); and
- b. The concentration of methane gas migrating from the landfill shall not exceed the lower explosive limit for methane ~~at~~ (5.0% methane by volume) within the facility [ boundary ] gas monitoring network.

2. The program implemented pursuant to subsections ~~B~~ C through ~~E~~ F of this section shall continue throughout the active life of the landfill and the closure and ~~postclosure~~ post-closure care periods or until the operator receives written authorization by the department to discontinue. Authorization to cease gas monitoring and control shall be based on a demonstration by the operator that there is no potential for gas migration beyond the facility boundary or into landfill structures. The demonstration to cease quarterly landfill gas monitoring requires a minimum of 12 consecutive calendar quarters of monitoring events resulting in no exceedances of the action level or the compliance level for methane in the gas monitoring network, during which time no active gas control or remediation activities had occurred.

3. Gas monitoring and control systems shall be modified, during the closure and ~~postclosure~~ post-closure maintenance period, to reflect changing on-site and adjacent land uses. ~~Postclosure~~ Post-closure land use at the site shall not interfere with the function of gas monitoring and control systems.

4. The operator may request a reduction of monitoring or control activities based upon the results of collected monitoring data. The request for reduction of monitoring or control activities shall be submitted in writing to the department.

~~B.~~ C. The operator shall implement a gas monitoring program at the landfill in accordance with the following requirements:

1. The gas monitoring network shall be designed to ensure detection of the presence of decomposition gas migrating beyond the landfill facility boundary and into landfill structures.
2. The monitoring network shall be designed to account for the following specific site characteristics, and potential migration pathways or barriers, including, ~~but not limited to:~~
  - a. Local soil and rock conditions;
  - b. Hydrogeological and hydraulic conditions surrounding the landfill;
  - c. Locations of buildings and structures relative to the waste deposit area;
  - d. Adjacent land use, and inhabitable structures within 1,000 feet of the landfill facility boundary;
  - e. Manmade pathways, such as underground construction; and
  - f. The nature and age of waste and its potential to generate decomposition gas.
3. Owners or operators of certain large sanitary landfills and landfills located in nonattainment areas may be required to perform additional monitoring as provided in ~~40 CFR 60.33c, 40 CFR 60.750, and 9VAC5-40-5800. 40 CFR Part 60 as adopted by reference in Article 5 (9VAC5-50-400 et seq.) of 9VAC5-50; 40 CFR Part 63 as adopted in Article 2 (9VAC5-60-90 et seq.) of 9VAC5-60; and Article 43 (9VAC5-40-5800 et seq.) of 9VAC5-40, Emission Standards for Municipal Solid Waste Landfills.~~
4. At a minimum, the gas monitoring frequency shall be quarterly (i.e., during each calendar quarter and within 60 to 120 days from the previous event). The department may require more frequent monitoring at locations where monitoring results indicate gas migration or gas accumulation in devices or structures designed to detect migrating gas.
5. Gas monitoring probes shall be operated and maintained as designed throughout the duration of the gas monitoring program. At a minimum:
  - a. Probes shall be permanently labeled or tagged with the identification number;
  - b. The probe casings shall be capped or locked to prevent [ discourage ] tampering and to protect the probes from exposure to the elements;
  - c. Probes shall be sealed to prevent venting to the atmosphere between monitoring events. Ambient and external air shall not be allowed to enter the probe prior to or during gas monitoring events; and
  - d. Functionality and integrity of the probes shall be checked during monitoring events. Probes must be repaired or replaced upon recognition of damage or nonperformance. Repairs and replacements of probes shall be completed and documented prior to the next gas monitoring event unless an alternate timeframe is requested and approved.

~~G.~~ D. Gas Remediation remediation.

1. When the gas monitoring results indicate concentrations of methane in excess of the action levels, 25% of the lower explosive limit (LEL) for methane (1.25% methane by volume) in landfill structures (excluding gas control or recovery system components) or 80% of the LEL for methane at (4.0% methane by volume) within the facility [ ~~boundary~~ ] ; gas monitoring network, the operator shall:
  - a. Take all immediate steps necessary to protect public health and safety including those required by the contingency plan.
  - b. Notify the department in writing within five working days of learning that action levels have been exceeded, and indicate what has been done or is planned to be done to resolve the problem.
  - c. Increase the gas monitoring frequency of the exceeding probe or structure and those probes immediately adjacent, including at least one probe on each side, if necessary to monitor the risk to public health and safety. The monitoring frequency following an action level exceedance and timeframe for increased monitoring, if required, shall be coordinated with the department based on the proximity to receptors and potential migration pathways.
2. When the gas monitoring results indicate concentrations of methane in excess of the compliance levels, 25% of the LEL for methane (1.25% methane by volume) in landfill structures (excluding gas control or recovery system components) or the LEL for methane at (5.0% methane by volume) within the facility [ ~~boundary~~ ] gas monitoring network, the operator shall, ~~within 60 days of detection, implement a remediation plan for the methane gas releases and submit it to the department for modification of the landfill permit. The plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall include an implementation schedule specifying timeframes for implementing corrective actions, an evaluation of the effectiveness of such corrective actions, and milestones for proceeding in implementation of additional corrective actions, if necessary to reestablish compliance.;~~

- a. Take all immediate steps necessary to protect public health and safety, including those required by the contingency plan.
- b. Notify the department within 24-hours (orally) and in writing within five working days of learning that compliance levels have been exceeded, in accordance with 9VAC20-81-530 C 3.
- c. Increase the gas monitoring frequency of the exceeding probe or structure and those probes immediately adjacent, including at least one probe on each side. The monitoring frequency following a compliance level exceedance and timeframe for increased monitoring shall be coordinated with the department based on the proximity to receptors and potential migration pathways.
- d. Within 10 days of detection, provide written notification of the compliance level exceedance to [ adjacent ] property owners and occupants of occupied structures within 500 feet of the exceeding probe or structure. The notification shall include a brief description of steps being taken to correct the issue and shall offer to provide methane monitoring for the occupied structure. Additional notifications are not required after each subsequent monitoring event while the facility is developing and implementing the gas remediation plan to address the exceedance. However, if the exceedance continues after one year, the facility shall provide written re-notification to the property owners and occupants of the continued exceedance and shall include a brief description of steps being taken to correct the issue. The facility shall also provide written notification to [ adjacent ] property owners and occupants once the department has approved for the facility to resume a quarterly monitoring frequency of the exceeding probe or structure after the facility has demonstrated a return-to-compliance.
- e. Within 60 days of detection, implement a remediation plan for the methane gas releases and submit it to the department for modification of the landfill permit. The plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall include an implementation schedule specifying timeframes for implementing corrective actions, an evaluation of the effectiveness of such corrective actions, and milestones for proceeding in implementation of additional corrective actions if necessary to reestablish compliance. The plan shall include an assessment of probe spacing in the monitoring network. The lateral spacing between probes shall not exceed 250 feet unless otherwise approved by the department based on site-specific factors. The department may require installation of additional monitoring probes to address the proximity to receptors or potential migration pathways.

3. A gas remediation system shall:

- a. Prevent methane accumulation in onsite structures.
- b. Reduce methane concentrations at monitored facility boundaries to below compliance levels in the timeframes specified in the gas remediation plan.
- c. Provide for the collection and treatment ~~and/or~~ or disposal of decomposition gas condensate produced at the surface. Condensate generated from gas control systems may be recirculated into the landfill provided the landfill complies with the liner and leachate control systems requirements of this part. Condensate collected in condensate traps and drained by gravity into the waste mass will not be considered recirculation.

4. Extensive systems to control emissions of nonmethane organic compounds may be required under the Clean Air Act (~~40 CFR 60.33c and 40 CFR 60.750~~) and ~~9VAC5-40-5800~~. ~~40 CFR Part 60 as adopted by reference in Article 5 (9VAC5-50-400 et seq.) of 9VAC5-50; 40 CFR Part 63 as adopted in Article 2 (9VAC5-60-90 et seq.) of 9VAC5-60; and Article 43 (9VAC5-40-5800 et seq.) of 9VAC5-40, Emission Standards for Municipal Solid Waste Landfills.~~ Facilities that are required to construct and operate systems designed to comply with those regulations will be considered to be in compliance with the requirements of subdivisions G 3 a and b of this subsection, unless monitoring data continues to indicate an exceedance of compliance levels. Gas control systems also may be subject to the Virginia Permits for Stationary Sources Program 9VAC5-80 or other state air pollution control regulations.

5. ~~The landfill shall notify the department of an exceedance of the compliance level or unusual condition that may endanger human health and the environment in accordance with 9VAC20-81-530 C 3, such as when an active gas remediation system is no longer operating in such a manner as to maintain compliance with this section~~ take immediate actions as necessary to investigate and control any unusual conditions that may endanger human health and the environment, such as when an active gas remediation system is no longer operating in such a manner as to maintain compliance with this section and when conditions are indicative of or could cause subsurface fire or combustion or subsurface reaction or oxidation.

~~D.~~ E. Odor management.

- 1. ~~When an odor nuisance or hazard is created under normal operating conditions and upon~~

~~notification from the department, the permittee shall, within 90 days, develop and implement an odor management plan to address odors that may impact citizens beyond the facility boundaries. The permittee shall place the plan in the operating record and a copy shall be submitted to the department for its records. Odor management plans developed in accordance with Virginia Air Regulations, 9VAC5-40-140, 9VAC5-50-140 or other state air pollution control regulations will suffice for the provisions of this subsection. Odor complaints. When a facility receives an odor complaint, either directly from the public or through contact by the department, the facility shall:~~

- ~~a. Document the odor complaint in the facility's operating record, noting the address or general area where the odor is detected, time of day, and weather conditions, as well as a description of the odor and its intensity;~~
- ~~b. Promptly investigate the complaint to determine the potential sources of odor and employ remedial measures as appropriate to control or minimize those odors; and~~
- ~~c. Document in the facility's operating record all areas investigated, a summary of findings including potential sources of odor, and remedial actions taken.~~

~~2. The plan shall identify a contact at the landfill that citizens can notify about odor concerns. Odor management plan. When an odor nuisance or hazard is created under normal operating conditions and upon notification from the department, the permittee shall, within 90 days, develop and implement an odor management plan to address odors that may impact citizens beyond the facility boundaries. The plan shall identify a contact at the facility who citizens can notify about odor concerns, procedures for responding to odor complaints, and remedial measures to control or minimize odor. The permittee shall place the plan in the operating record and a copy shall be submitted to the department for its records. Odor management plans developed in accordance with Virginia Air Regulations, 9VAC5-40-140, 9VAC5-50-140 or other state air pollution control regulations will suffice for the provisions of this subsection.~~

~~3. Annual review. Facilities shall perform and document an annual a review and update of the odor management plan, on an annual basis (at least once every 12 months) to assess the effectiveness of remedial measures employed and ensure consistency with current operations and regulatory requirements. The facility shall update the odor management plan as necessary, to include additional actions to address ongoing odor management issues. The department may require the facility to take additional actions to minimize odors, such as, but not limited to:~~

- ~~a. Modifying operating procedures to address incoming odorous wastes;~~
- ~~b. Applying and maintaining more frequent cover soil or alternate materials over areas of exposed waste;~~
- ~~c. Investigating installation of, or improvements to, landfill gas control systems, odor control systems, or leachate collection and storage systems; and~~
- ~~d. Sampling and analysis, or other investigations, to determine the source of the odor.~~

~~E. F. Recordkeeping. The owner or operator shall keep the records of the results of gas monitoring and any gas remediation issues throughout the active life of the landfill and the postclosure post-closure care period. The records shall include:~~

- ~~1. The initial and steady-state concentrations of the methane as measured at each probe and within each onsite structure; The steady-state concentration shall be used for comparison to action and compliance levels in accordance with the requirements of this section;~~
- ~~2. The documentation of date, time, barometric pressure, atmospheric temperatures, general weather conditions, and probe pressures;~~
- ~~3. The names of sampling personnel, apparatus utilized, and a brief description of the methods used; including calibration procedures. Field calibration information shall include the date, time, calibration gas types and concentrations, expiration date of field calibration gas canisters, and calibration results. Records of factory calibration, performed at a frequency as indicated by the manufacturer, shall also be maintained with the gas monitoring records;~~
- ~~4. A numbering system to correlate monitoring results to a corresponding probe location; and~~
- ~~5. Monitoring and design records for any gas remediation or control system.~~

#### **9VAC20-81-210. Leachate control.**

~~A. Design plan. The design plan shall provide for leachate management. This design plan shall include the following:~~

- ~~1. An estimate of the quality and quantity of leachate to be produced annually by the facility. The estimate shall include the 30-day leachate volume and average flow rate of each month of the year. A separate estimate shall be submitted for anticipated leachate generation at the end of five year increments of operation for 20 years, or until closure, whichever date is earlier. For existing facilities, current leachate generation shall be included with this separate estimate.~~

2. The leachate collection system shall be designed ~~and~~, constructed and operated to maintain less than a 30 cm depth of leachate over the liner, excluding manifold trenches and sumps.

3. Plans, designs, and cross sections for the proposed collection and handling system.

4. Plans, designs, and cross sections for onsite leachate storage or treatment systems, including system appurtenances for storage, pretreatment, or treatment of leachate from the facility.

B. Tanks and surface impoundments used for storage of leachate shall have a flow equalization and surge capacity at least equal to the maximum expected production of leachate for any seven-day period for the life of the facility estimated under subdivision A 1 of this section. Leachate storage capacity may not be considered to include leachate that may have collected in or on the liner system. Storage tanks and impoundments shall be aerated, as necessary, to prevent and control odors.

C. Surface impoundments used for storage of leachate shall be equipped with a liner system that shall provide equal or greater protection of human health and the environment than that provided by the liner of the landfill producing the leachate.

D. The collected leachate shall be:

1. Discharged directly or after pretreatment into a line leading to the publicly owned treatment works or other permitted wastewater treatment facility;

2. Transported by a vehicle to an offsite permitted wastewater treatment facility;

3. Recirculated within the landfill, provided that the irrigated area is underlain by a composite liner or other liner system approved by EPA or Research, Development, and Demonstration plan for recirculation, and that the operation causes no runoff, ponding, or nuisance odors;

4. Treated onsite and discharged into surface water when authorized under VPDES permit; or

5. Other methods of treatment or disposal as approved by the department.

E. The collected leachate shall not be discharged to an underground drain field.

F. Leachate seeps. If a leachate ~~seep(s)~~ seep occurs, the owner or operator shall repair the ~~seep(s)~~ seep and do the following:

1. Take all immediate steps necessary to protect public health and safety including those required by the contingency plan.

2. Take immediate action to minimize, control, or eliminate the seep, and to contain and properly manage the leachate at the source of the seep.

3. Any leachate released outside the lined area permitted for waste disposal shall be properly collected and disposed.

G. The department may require the facility to conduct sampling and analysis if necessary to characterize and demonstrate the presence or absence of leachate in a surface water or stormwater collection system or other receptor if a release or discharge of leachate is suspected. The department will determine on a case-by-case basis which tests are appropriate.

#### **9VAC20-81-250. Groundwater monitoring program.**

A. General requirements.

1. Applicability.

a. Existing landfills. Owners or operators of all existing landfills shall be in compliance with the groundwater monitoring requirements specified in this section, except as provided for in subdivision 1 c of this subsection. Owners or operators of landfills that were permitted prior to December 21, 1988, but were closed in accordance with the requirements of their permit or existing regulation prior to December 21, 1988, are not required to be in compliance with the groundwater monitoring requirements specified in this section, unless conditions are recognized that classify the landfill as an ~~Open Dump~~ open dump as defined under 9VAC20-81-45.

b. New landfills. Owners or operators of new facilities shall be in compliance with the groundwater monitoring requirements specified in this section before waste can be placed in the landfill except as provided for in subdivision 1 c of this subsection.

c. No migration potential exemption. Groundwater monitoring requirements under this section may be suspended by the director if the owner or operator can demonstrate that there is no potential for migration of any Table 3.1 constituents to the uppermost aquifer during the active life and the ~~post-closure~~ post-closure care period of the landfill. This demonstration shall be certified by a qualified groundwater scientist and shall be based upon:

(1) Site-specific field collected measurements including sampling and analysis of physical, chemical, and biological processes affecting contaminant fate and transport; and

(2) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and the environment.

## 2. General requirements.

- a. Purpose. Owners or operators shall install, operate, and maintain a groundwater monitoring system that is capable of determining the landfill's impact on the quality of groundwater in the uppermost aquifer at the disposal unit boundary during the active life and ~~postclosure~~ post-closure care period of the landfill.
- b. Program requirements. The groundwater monitoring program shall meet the requirements of subdivision 3 of this subsection and comply with all other applicable requirements of this section.
- c. Director authority. The groundwater monitoring, sampling, and reporting requirements set forth here are minimum requirements. The director may require, by modifying the permit as allowed under 9VAC20-81-600 E, any owner or operator to install, operate, and maintain a groundwater monitoring system and conduct a monitoring and sampling program that contains requirements more stringent than this chapter imposes whenever it is determined that such requirements are necessary to protect human health and the environment.

## 3. Groundwater monitoring system.

- a. System requirements. A groundwater monitoring system shall be installed consisting of a sufficient number of monitoring wells, at appropriate locations and depths, capable of yielding sufficient quantities of groundwater for sampling and analysis purposes from the uppermost aquifer that:
  - (1) Ensures detection of groundwater contamination in the uppermost aquifer unless a variance to this location has been granted by the director under 9VAC20-81-740.
  - ~~(1)~~ (2) Represent the quality of background groundwater that has not been affected by a release from the landfill; and
  - ~~(2)~~ (3) Represent the quality of groundwater at the disposal unit boundary. ~~The downgradient monitoring system shall be installed at the disposal unit boundary in a manner that ensures detection of groundwater contamination in the uppermost aquifer unless a variance has been granted by the director under 9VAC20-81-740.~~
  - ~~(3)~~ (4) When physical obstacles preclude installation of groundwater monitoring wells at the disposal unit boundary, the downgradient monitoring wells may be installed at the closest practicable distance hydraulically downgradient from the boundary in locations that ensure detection of groundwater contamination in the uppermost aquifer.

- b. Multiunit systems. The director may approve a groundwater monitoring system that covers multiple waste disposal units instead of requiring separate groundwater monitoring systems for each unit when the landfill has several units, provided the multiunit groundwater monitoring system meets the requirement of subdivision 3 of this subsection and can be demonstrated to be equally protective of human health and the environment as individual monitoring systems. The system for each waste disposal unit would be based on the following factors:
  - (1) Number, spacing, and orientation of the waste disposal units;
  - (2) Hydrogeologic setting;
  - (3) Site history;
  - (4) Engineering design of the waste disposal units; and
  - (5) Type of waste accepted at the waste disposal units.

- c. Well construction. ~~All monitoring wells shall be of a size adequate for sampling and shall be cased and grouted in a manner that maintains the integrity of the monitoring well bore hole. This casing shall be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space above the sampling depth shall be sealed with a suitable material to prevent contamination of samples and the groundwater. The site-specific methods for monitoring well installation and construction shall be described in detail within a site-specific groundwater monitoring plan. All monitoring wells shall be:~~
  - (1) Of a size adequate for sampling;
  - (2) Cased and grouted in a manner that maintains the integrity of the monitoring well bore hole with the casing screened or perforated and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist;
  - (3) Installed with an annular space above the sampling depth that is sealed with a suitable material to prevent contamination of samples and the groundwater; and
  - (4) Installed with a screened interval at a depth that ensures the screened interval remains completely submerged at all times during the monitoring program.

- d. Boring logs. A log shall be made of each newly installed monitoring well describing the soils

or rock encountered, and the hydraulic conductivity of the geologic units (formations) encountered. A copy of the final ~~log(s)~~ log with appropriate maps, including at a minimum a site plan showing the location of all monitoring wells, the total depth of monitoring well, the location of the screened interval, the top and bottom of sand or gravel pack, and the top and bottom of the seal shall be sent to the department with the certification required under subdivision 3 g of this subsection.

e. Well maintenance. The monitoring wells, piezometers, and other groundwater measurement, sampling, and analytical devices shall be operated and maintained in a manner ~~that~~ consistent with that described in the site-specific groundwater monitoring plan, which allows them to perform to design specifications throughout the duration of the groundwater monitoring program. ~~Nonfunctioning monitoring wells must be replaced or repaired upon recognition of damage or nonperformance. Well repair or replacement shall be coordinated with the department prior to initiating the action.~~ Monitoring well maintenance includes, at a minimum:

(1) Locking and labeling the well; and

(2) Maintaining the concrete apron to be free of damage, sediment, vegetation, debris, or surface infiltration that could impair function or contaminate the well.

f. Nonfunctioning monitoring wells must be replaced or repaired upon recognition of damage or nonperformance. The schedule for well repair or replacement shall be coordinated with the department prior to initiating the action. Abandonment actions shall be consistent with the approved groundwater monitoring plan or established EPA RCRA guidance.

f. g. Network specifics. The network shall include at least one upgradient monitoring well and at least three downgradient monitoring wells. The number, spacing, and depths of monitoring wells included in a landfill's network shall be determined based on:

(1) Site-specific technical information that shall include thorough characterization by the owner or operator of:

(a) The thickness of any unsaturated geologic units or fill materials that may overlay the uppermost aquifer;

(b) The thickness and description of materials comprising the uppermost aquifer;

(c) Materials comprising ~~the~~ any confining unit defining the lower boundary of the uppermost aquifer, including, ~~but not limited to,~~ its thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities, and effective porosities; ~~and~~

(d) The calculated groundwater flow rate and direction within the uppermost aquifer ~~including any seasonal and temporal fluctuations in groundwater flow;~~ and

(e) Identification of any seasonal and temporal fluctuations in groundwater elevations or flow rate.

(2) The lateral spacing between downgradient monitoring wells based on site-specific information supplied under subdivision 3 f g (1) of this subsection.

gh. Monitoring well certification. The groundwater monitoring ~~well(s)~~ wells shall, within 30 days of ~~well(s)~~ well installation, ~~be:~~

(1) Be certified by a qualified groundwater scientist noting that all wells have been installed in accordance with the documentation submitted under subdivision 3 d of this subsection; and

(2) Within 14 days of completing this certification, the owner or operator shall transmit the certification to the department.

4. The groundwater sampling and analysis requirements for the groundwater monitoring system are as follows:

a. Quality assurance and control. The groundwater monitoring program shall include consistent field sampling and laboratory analysis procedures that are designed to ensure monitoring results that provide an accurate representation of the groundwater quality at the background and downgradient wells. At a minimum the program, which shall be described in detail in a groundwater monitoring plan, shall include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures;

(4) Chain of custody control; and

(5) Quality assurance and quality control.

b. Analytical methods. The groundwater monitoring program shall include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure solid waste constituents in groundwater samples.

(1) Groundwater samples obtained pursuant to 9VAC20-81-250 B or C shall not be filtered prior to laboratory analysis.

(2) The sampling, analysis and ~~quality control~~quality control or quality assurance methods set forth in EPA document SW-846, as amended, shall be used for all constituents found in Columns A and B of Table 3.1.

(3) The department may require ~~re-sampling~~ resampling if it believes the groundwater samples were not properly ~~sampled~~ obtained, preserved, transported, or analyzed during a groundwater monitoring event.

c. Groundwater rate and flow. Groundwater elevations at each monitoring well shall be determined immediately prior to purging each time a sample is obtained. The owner or operator shall determine the rate and direction of groundwater flow each time groundwater is sampled pursuant to subsection B or C of this section or 9VAC20-81-260. Groundwater elevations in wells that monitor the same waste disposal unit ~~or units~~ shall be measured within a period of time short enough to avoid temporal variations, which could preclude accurate determination of groundwater flow rate and direction.

d. Background data. The owner or operator shall establish background groundwater quality in a hydraulically upgradient or background well, or wells, for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the landfill. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the landfill if they meet the requirements of subdivision 4 e of this subsection. [ After the initial calculation of site background, background values shall be updated in a manner consistent with EPA's 2009 Unified Statistical guidance (as updated), the site's geologic and hydrogeologic characteristics, or as requested by the Department. ]

e. Alternate well provision. A determination of background quality may be based on sampling of wells that are not upgradient from the waste disposal unit or units where:

(1) Hydrogeologic conditions do not allow the owner or operator to determine what wells are upgradient; and

(2) Sampling at these wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells.

f. Sampling and statistics. The number of samples collected to establish groundwater quality data shall be consistent with the appropriate statistical procedures determined pursuant to subdivision 4 g of this subsection. The collection of groundwater samples via [ ~~dedicated~~ ] bailers is prohibited unless the department has issued written approval to a site-specific request demonstrating a geotechnical need, certified by a qualified groundwater scientist, submitted by the owner or operator.

g. Statistical methods. The owner or operator shall specify in the Groundwater Monitoring Plan the statistical ~~method(s)~~ method listed in subsection D of this section that will be used in evaluating groundwater monitoring data for each monitoring constituent. The statistical ~~test(s)~~ test chosen shall be applied separately for each groundwater constituent in each well after each individual sampling event required under subdivision B 2 or 3, C 2 or 3, or as required under 9VAC20-81-260 E 1.

h. Evaluation and response. After each sampling event required under subsection B or C of this section, the owner or operator shall determine whether or not there is a statistically significant increase over background values for each groundwater constituent required in the particular groundwater monitoring program by comparing the groundwater quality of each constituent at each monitoring well installed pursuant to subdivision 3 a of this subsection to the background value of that constituent. In determining whether a statistically significant increase has occurred, the owner or operator shall:

(1) Ensure the sampling result comparisons are made according to the statistical procedures and performance standards specified in subsection D of this section;

(2) Ensure that within 30 days of completion of sampling and laboratory analysis actions, the determination of whether there has been a statistically significant increase over background at each monitoring well has been completed; and

(3) If identified, the statistically significant increase shall be reported to the department within the notification timeframes identified in subsection B or C of this section and discussed in the quarterly or semi-annual report submission described under subdivision E 2 c of this section. Notifications qualified as being "preliminary," "suspect," "unverified," or otherwise not a final determination of a statistical exceedance will not be accepted by the department.

i. Verification sampling. The owner or operator may at any time within the 30-day statistically significant increases determination period defined under subdivision A 4 h (2) of this section,

obtain verification samples if the initial review of analytical data suggests results that might not be an accurate reflection of groundwater quality at the disposal unit boundary at the well in question. Undertaking verification sampling is a voluntary action on the part of the owner or operator and shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under subdivision A 4 h (2), B 2 or 3, or C 2 or 3 of this section.

j. Data validation. The owner or operator may at any time within the 30-day statistically significant increases determination period defined under subdivision A 4 h (2) of this subsection, undertake third-party data validation of the analytical data received from the laboratory. Undertaking such validation efforts is a voluntary action on the part of the owner or operator and shall not alter the timeframes associated with determining or reporting a statistically significant increase as otherwise defined under subdivision A 4 h (2), B 2 or 3, or C 2 or 3 of this section.

#### 5. Alternate source demonstration allowance.

a. Allowance. As a result of any statistically significant increase identified while monitoring groundwater under subdivision B 2 or 3, or C 2 or 3 of this section, or at ~~anytime~~ any time within the ~~Corrective Action~~ corrective action process under 9VAC20-81-260, the owner or operator has the option of submitting an Alternate Source Demonstration report, certified by a qualified groundwater scientist, demonstrating:

- (1) A source other than the landfill caused the statistical exceedance;
- (2) The exceedance resulted from error in sampling, analysis, or evaluation; or
- (3) The exceedance resulted from a natural variation in groundwater quality.

b. Timeframes. A successful demonstration must be made within 90 days of noting a statistically significant increase. The director may approve a longer timeframe for submittal and approval of the Alternate Source Demonstration with appropriate justification.

c. Evaluation and response. Based on the information submitted in accordance with subdivision 5 a of this subsection, the director will:

- (1) In the case of the successful demonstration of an error in sampling, analysis, or evaluation, allow the owner or operator to continue monitoring groundwater in accordance with the monitoring program in place at the time of the statistical exceedance.
- (2) In the case of a successful demonstration of an alternate source for the release or natural variability in the aquifer matrix:
  - (a) Require changes in the groundwater monitoring system as needed to accurately reflect the groundwater conditions and allow the owner or operator to continue monitoring groundwater in accordance with the monitoring program in place at the time of the statistical exceedance;
  - (b) Require any changes to the monitoring system be completed prior to the next regularly scheduled groundwater monitoring event or ~~within 90 days (whichever is greater)~~ a date selected by the director; and
  - (c) Require any changes to the monitoring system be approved via the modification process under 9VAC20-81-600 ~~within 90 days of the approval of the alternate source demonstration~~.
- (3) In the case of an unsuccessful Alternate Source Demonstration, require the owner or operator to initiate the actions that would otherwise be required as a result of the statistically significant increase noted under subdivision B 2 or 3, or C 2 or 3 of this section as appropriate.

#### 6. Establishment of groundwater protection standards.

a. Requirement. Upon recognition of a statistically significant increase over background and while monitoring in the Assessment or Phase II monitoring programs defined under subdivision B 3 or C 3 of this section, the owner or operator shall propose a groundwater protection standard for all detected Table 3.1 ~~Column~~ Columns B and C constituents. The proposed standards shall be submitted to the department by a qualified groundwater scientist and be accompanied by relevant historical groundwater sampling data to justify the proposed concentration levels.

b. Establishment process. The groundwater protection standards shall be established in the following manner:

(1) For constituents for which a maximum contaminant level (MCL) has been promulgated under § 1412 of the Safe Drinking Water Act (40 CFR Part 141) or by Virginia Department of Health regulation, the MCL for that constituent shall be automatically established as the groundwater protection standard upon submission of the proposed standards.

(2) If the owner or operator determines that a site-specific background concentration is greater than the MCL associated with that constituent under subdivision 6 b (1) of this subsection, the background value may be substituted for use as the groundwater protection standard in lieu of

the MCL for that constituent upon receiving written department approval.

(3) For constituents for which no MCL has been promulgated, site-specific background concentration ~~value(s)~~ values may be used upon receiving written department approval.

(4) For constituents for which no MCL has been promulgated, a risk-based alternate concentration levels may be used if approved by the director as long as:

(a) The owner or operator submits a request to the department asking for approval to use risk-based alternate concentration levels for a specific list of constituents and identifies that these constituents lack an MCL. In the request the owner or operator shall specify whether site-specific, independently calculated, risk-based alternate concentration levels will be applied, or if the facility will accept the default department-provided limits.

(b) The alternate concentration levels that may be provided as default values by the department and those independently calculated by the owner or operator are demonstrated to meet the following criteria or factors before they can be used as groundwater protection standards:

(i) Groundwater quality - The potential for adverse quality effects considering the physical and chemical characteristics of the waste in the landfill, its potential for migration in the aquifer; the hydrogeological characteristics of the facility and surrounding land; the rate and direction of groundwater flow; the proximity and withdrawal rates of groundwater users; the current and future uses of groundwater in the area; the existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality.

(ii) Human exposure - Potential for health risks caused by exposure to waste constituents released from the landfill using federal guidelines for assessing the health risks of environmental pollutants; scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR Part 792); or equivalent standards. For carcinogens, the alternate concentration levels must be set based on a lifetime cancer risk level due to continuous lifetime exposure within the  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  range. For systemic toxicants, alternate concentration levels must be demonstrated to be levels to which the human population (including sensitive subgroups) could be exposed to on a daily basis without the likelihood of appreciable risk of deleterious effects during a lifetime.

(iii) Surface water - The potential adverse effect on hydraulically connected surface water quality based on the volume, physical and chemical characteristics of the waste in the landfill; the hydrogeological characteristics of the facility and surrounding land; the rate and direction of groundwater flow; the patterns of rainfall in the region; the proximity of the landfill to surface waters; the current and future uses of surface waters in the area and any water quality standards established for those surface waters; the existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality.

(iv) Other adverse effects - Potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; the persistence and permanence of the potential adverse effects; and the potential for health risks caused by human exposure to waste constituents using factors shown in subdivision b (4) (b) (ii) of this subsection.

(5) In making any determination regarding the use of alternate concentration levels under this section, the director will:

(a) Consider any identification of underground sources of drinking water as identified by EPA under 40 CFR 144.7,

(b) Consider additional or modified monitoring requirements or control measures,

(c) Include a schedule for the periodic review of the alternate concentration levels, or

(d) Approve the alternate concentration levels as proposed or issue modified alternate concentration levels.

c. Implementation. Groundwater protection standards shall be considered established for the facility upon completion of the actions described under either subdivision A 6 b (1), (2), (3) or if necessary (4) and shall be placed in the facility Operating Record and shall be used during subsequent comparisons of groundwater sampling data consistent with the requirements of subdivision B 3 f or C 3 e of this section.

d. MCL and background revisions. After establishment of groundwater protection standards under subdivision B 6 b, if the standards are modified as a result of revisions to any MCL or department-approved background, the facility shall update its listing of groundwater protection standards and shall place the new list in the Operating Record and shall use the new values during subsequent comparisons of sampling data consistent with the requirements of subdivision B 3 f or C 3 e of this section.

e. Alternate concentration levels revisions. After establishment of groundwater protection

standards under subdivision B 6 b of this section, if the department-approved alternate concentration levels change based on information released by EPA, to the extent practical, the department will issue revisions to the alternate concentration levels for facility use no more often than an annual basis. The facility shall use the department approved alternate concentration levels ~~listing~~ in effect at the time the sampling event takes place when comparing the results against the groundwater protection standards under subdivision B 3 f or C 3 e of this section.

## B. Monitoring for sanitary landfills.

### 1. Applicability.

a. Existing facilities. Except for those sanitary landfills identified in subdivision C 1 of this section, existing sanitary landfill facilities and closed facilities that have accepted waste on or after October 9, 1993, and in the case of ~~'small'~~ "small" landfills on or after April 9, 1994, shall be in compliance with the detection monitoring requirements specified in subdivision 2 of this subsection unless existing sampling data requires a move to assessment monitoring described under subdivision 3 of this subsection.

b. New facilities. Facilities placed in operation to receive waste after October 9, 1993, shall be in compliance with the detection monitoring requirements specified in subdivision 2 of this section before waste can be placed in the landfill unless existing sampling data requires a move to assessment monitoring described under subdivision 3 of this subsection.

c. Closed facilities. Unless an extension to the deadline above has been granted by the director, closed facilities that have ceased to accept any waste on or before October 9, 1993, and in the case of a "small" landfill, before April 9, 1994, may comply with the "State Monitoring Program" monitoring requirements specified in subdivision C 2 or 3 of this section.

d. Other facilities. Owners or operators of disposal facilities not subject to the federal groundwater monitoring requirements prescribed under 40 CFR Parts 257 and 258 must perform the groundwater monitoring described in subdivision C 2 or 3 of this section.

e. Proximity to wetlands. Owners or operators of sanitary landfills that accepted waste after June 30, 1999, must:

(1) Perform quarterly groundwater monitoring unless the director determines that less frequent monitoring is necessary consistent with the requirements of the special provisions regarding wetlands in § 10.1-1408.5 of the Code of Virginia.

(2) The quarterly monitoring frequency shall remain in effect until the department is notified waste is no longer being accepted at the sanitary landfill.

(3) This requirement will not limit the authority of the Waste Management Board or the director to require more frequent groundwater monitoring if required to protect human health and the environment.

(4) For purposes of this subdivision "proximity to wetlands" shall be defined as landfills that were constructed on a wetland, have a potential hydrologic connection to such a wetland in the event of an escape of liquids from the facility, or are within a mile of such a wetland.

### 2. Detection monitoring program.

a. Sampling requirements. All sanitary landfills shall implement detection monitoring except as otherwise provided in subdivision 1 of this subsection. The monitoring frequency for all constituents listed in Table 3.1 ~~Column~~ Columns A and C shall be as follows:

(1) Initial sampling period.

(a) For facilities that monitor groundwater on a semi-annual basis, a minimum of ~~four~~ eight independent samples from each well (background and downgradient) shall be collected and analyzed for the Table 3.1 ~~Column~~ Columns A and C constituents prior to the facility becoming active or during the first semi-annual sampling period. A semi-annual period is defined under 9VAC20-81-10.

(b) For facilities that monitor groundwater on a quarterly basis as a result of subdivision 1 e of this subsection, a minimum of [ ~~four~~ ] [ eight ] samples from each well (background and downgradient) shall be collected and analyzed for the Table 3.1 ~~Column~~ Columns A and C constituents. The samples shall be collected [ prior to or ] within the first quarterly period, using a schedule that ensures, to the greatest extent possible, an accurate calculation of background concentrations.

(2) Subsequent sampling events. At least one sample from each well (background and downgradient) shall be collected and analyzed during subsequent semi-annual or quarterly events during the active life and ~~postclosure~~ post-closure period. ~~Data from subsequent background sampling events may be added to the previously calculated background data so that the facility maintains the most accurate representation of background groundwater quality~~

~~with which to carry out statistical analysis required under subdivision A 4 h of this section.~~

(3) Alternate sampling events. The director may specify an appropriate alternate frequency for repeated sampling and analysis during the active life (including closure) and the ~~post-closure~~ post-closure care period. The alternate frequency during the active life (including closure) and the ~~post-closure~~ post-closure period shall be no less than annual. The alternate frequency shall be based on consideration of the following factors:

- (a) Lithology of the aquifer and unsaturated zone;
- (b) Hydraulic conductivity of the aquifer and unsaturated zone;
- (c) Groundwater flow rates;
- (d) Minimum distance between upgradient edge of the disposal unit boundary and downgradient monitoring well screen (minimum distance of travel); and
- (e) Resource value of the aquifer.

~~[ (4) Data from the background wells during each subsequent sampling event shall be added to the previously calculated background data for the recalculation of site background once every four years, unless approval for a longer timeframe is obtained from the department, to maintain the most accurate representation of background groundwater quality for statistical purposes required under subdivision A 4 h of this section. ]~~

b. Evaluation and response. If the owner or operator determines under subdivision A 4 h of this section, that there is:

(1) A statistically significant increase over background as determined by a method meeting the requirements of subsection D of this section, for one or more of the constituents listed in Table 3.1 ~~Column~~ Columns A and C at any of the monitoring wells at the disposal unit boundary during any detection monitoring sampling event, the owner or operator shall:

- (a) Within 14 days of this finding, notify the department of this fact, indicating which constituents have shown statistically significant increases over background levels; and
- (b) Within 90 days, (i) establish an assessment monitoring program meeting the requirements of subdivision 3 of this subsection, or (ii) submit an Alternate Source Demonstration as specified in subdivision A 5 of this section. ~~If, after 90 days, a successful demonstration has not been made, the owner or operator shall initiate an assessment monitoring program as otherwise required in subdivision 3 of this subsection. The 90-day Alternate Source Demonstration period may be extended by the director for good cause.~~

(c) If, after 90 days, a successful demonstration has not been made, initiate an assessment monitoring program as otherwise required in subdivision 3 of this subsection. The 90-day Alternate Source Demonstration period may be extended by the director for good cause.

(2) No statistically significant increase over background as determined by a method meeting the requirements of subsection D of this section, for any of the constituents listed in Table 3.1 ~~Column~~ Columns A and C at any of the monitoring wells at the disposal unit boundary during any detection monitoring sampling event; the owner or operator may remain in detection monitoring and include a discussion of the sampling results and statistical analysis in the semi-annual or quarterly report required under subdivision E 2 c of this section.

3. Assessment monitoring program. The owner or operator shall implement the assessment monitoring program whenever a statistically significant increase over background has been detected during monitoring conducted under the detection monitoring program.

a. Sampling requirements. Within 90 days of recognizing a statistically significant increase over background for one or more of the constituents listed in Table 3.1 ~~Column~~ Columns A, and C the owner or operator shall, unless in receipt of an approval to an Alternate Source Demonstration under subdivision A 5 of this section or a director-approved extension, conduct the initial assessment monitoring sampling event for the constituents found in Table 3.1 ~~Column~~ Columns B and C. A minimum of one sample from each well installed under subdivision A 3 a of this section shall be collected and analyzed during the initial and all subsequent annual Table 3.1 ~~Column~~ Columns B and C sampling events.

b. Director provisions:

(1) The Subset establishment. Based on the results of the initial site-wide Table 3.1 Columns B and C assessment monitoring event, the owner or operator may request that the director approve an appropriate subset of monitoring wells that may remain in detection monitoring defined under subdivision 2 of this subsection, based on the results of the initial, or subsequent, Subsequent to this initial annual Table 3.1 Column Columns B and C sampling events. event, any new downgradient compliance well installed shall be allowed the opportunity to join the subset based on the results of the initial Table 3.1 Columns B and C monitoring event

completed at the new well. Monitoring wells under either option described in this subdivision b (1) may be considered for the subset if:

(a) They show no detections of Table 3.1 ~~Column~~ Columns B and C constituents other than those already previously detected in detection monitoring defined under subdivision 2 of this subsection; and

(b) They display no statistically significant increases over background for any constituents on the Table 3.1 ~~Column~~ Columns A and C list. If ~~an~~ a statistically significant increase is subsequently recognized in a well already approved for the subset, the well shall no longer be considered part of the detection monitoring subset.

(2) Modifications to the constituent list. The owner or operator may request the director delete any of the Table 3.1 ~~Column~~ Columns B and C monitoring constituents from the assessment monitoring program if the owner or operator demonstrates that the deleted constituents are not reasonably expected to be in or derived from the waste.

(3) Sampling frequency. The director may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Table 3.1 ~~Column~~ Columns B and C constituents required by subdivision 3 a of this subsection during the active life and ~~postclosure~~ post-closure care period based on the consideration of the following factors:

(a) Lithology of the aquifer and unsaturated zone;

(b) Hydraulic conductivity of the aquifer and unsaturated zone;

(c) Groundwater flow rates;

(d) Minimum distance between upgradient edge of the disposal unit boundary and downgradient monitoring well screen (minimum distance of travel);

(e) Resource value of the aquifer; and

(f) Nature (fate and transport) of any constituents detected in response to subdivision 3 f of this subsection.

c. Development of background. After obtaining the results from the initial or subsequent annual sampling events required in subdivision 3 a of this subsection, the owner or operator shall:

(1) Within 14 days, notify the department identifying the Table 3.1 ~~Column~~ Columns B and C constituents that have been detected;

(2) Within 90 days, and on at least a semi-annual basis thereafter, ~~resample~~;

(a) Resample all wells installed under subdivision A 3 a of this section, conduct analyses for all constituents in Table 3.1 ~~Column~~ Columns A and C as well as those constituents in Column B that are detected in response to subdivision 3 a of this subsection and subsequent Table 3.1 ~~Column~~ Columns B and C sampling events as may be required of this section; ~~and report~~

(b) Report this data in the semi-annual or quarterly report defined under subdivision E 2 c of this section;

(3) Within 180 days of the initial sampling event, establish background concentrations for any Table 3.1 ~~Column~~ Columns B and C constituents detected pursuant to subdivision B 3 a of this subsection. A minimum of ~~four~~ eight independent samples from each well (background and downgradient) shall be collected and analyzed to establish background for the detected constituents unless a lesser number of samples has been approved by the department based on a site-specific request certified by a qualified groundwater scientist and submitted by the owner or operator.

d. Establishment of groundwater protection standards. Within 30 days of establishing background under subdivision 3 c (3) of this subsection, submit proposed groundwater protection standards for all constituents detected under Assessment monitoring. The groundwater protection standards shall be approved by the director in accordance with the provisions of subdivision A 6 of this section.

e. Groundwater monitoring plan. No later than 60 days after approval of the groundwater protection standards in accordance with subdivision A 6 of this section, the owner or operator shall submit an updated Groundwater Monitoring Plan that details the site monitoring well network and sampling and analysis procedures undertaken during groundwater monitoring events. ~~The owner or operator shall additionally:~~

(1) ~~No later than 30 days after the submission of the Groundwater Monitoring Plan, request a permit modification to incorporate the plan and related groundwater monitoring modules into the landfill's permit in accordance with 9VAC20-81-600. The department may waive the requirement for a permit modification if the Groundwater Monitoring Plan included in the landfill's permit reflects current site conditions in accordance with the regulations.~~

~~(2) If the 30-day timeframe specified in subdivision 3 e (1) of this subsection is exceeded, the director will modify the permit in accordance with 9VAC20-81-600 E.~~

f. Evaluation and response.

(1) If the concentrations of all Table 3.1 ~~Column~~ Columns B and C constituents at all downgradient compliance wells are shown to be at or below background values, using the statistical procedures in subsection D of this section, for two consecutive Table 3.1 ~~Column~~ Columns B and C sampling events, the owner or operator shall notify the director of this finding in the semi-annual or quarterly monitoring report and may return to detection monitoring defined under subdivision 2 of this subsection.

(2) If the concentrations of any Table 3.1 ~~Column~~ Columns B and C constituents are found at all downgradient compliance wells to be above background values, but below the groundwater protection standards established under subdivision A 6 of this section using the statistical procedures in subsection D of this section, the owner or operator shall continue in assessment monitoring in accordance with this section and present the findings to the department in the semi-annual or quarterly report.

(3) If one or more Table 3.1 ~~Column~~ Columns B and C constituents are detected at any downgradient compliance well onsite at statistically significant levels above the groundwater protection standard established under subdivision A 6 of this section using the statistical procedures in subsection D of this section, the owner or operator shall:

(a) Within 14 days of this finding, notify the department identifying the exceeding monitoring well and the Table 3.1 ~~Column~~ Columns B and C constituents that have exceeded the groundwater protection standard. The notification will include a statement that within 90 days the owner or operator will either:

- (i) Undertake characterization and assessment actions required under 9VAC20-81-260 C 1; or
- (ii) Submit an Alternate Source Demonstration as specified in subdivision A 5 of this section. If a successful demonstration is made within 90 days, the owner or operator may continue monitoring in accordance with the assessment monitoring program pursuant to subdivision 3 of this subsection. If the 90-day period passes without demonstration approval, the owner or operator shall comply with the actions under 9VAC20-81-260 C within the timeframes specified unless the director has granted an extension to those timeframes.

(b) Describe the sampling results in the semi-annual or quarterly report.

#### C. Monitoring for CDD, industrial, and State Monitoring Program sanitary landfills.

##### 1. Applicability.

a. Sanitary landfills. Owners or operators of sanitary disposal facilities that have ceased to accept solid waste prior to the federally imposed deadline of October 9, 1993, or in the case of a "small landfill" before April 9, 1994, are eligible, with the director's approval, to conduct the state groundwater monitoring program described in this section in lieu of the groundwater monitoring program required under subdivision B 2 or 3 of this section.

b. CDD and industrial landfills. Owners or operators of CDD and industrial landfills not subject to the federal groundwater monitoring requirements prescribed under 40 CFR Parts 257 and 258 shall perform the groundwater monitoring described in this section.

c. Other landfills. All other landfills excluding sanitary landfills, including those that accepted hazardous waste from very small quantity generators after July 1, 1998, shall perform the groundwater monitoring described in this section.

##### 2. First determination monitoring program.

a. Sampling requirements. A first determination monitoring program shall consist of a background-establishing period followed by semi-annual sampling and analysis for the constituents shown in Table 3.1 ~~Column~~ Columns A and C at all wells installed under subdivision A 3 a of this section. Within 14 days of each event during first determination monitoring, notify the department identifying the Table 3.1 ~~Column~~ Columns A and C constituents that have been detected.

b. Development of background. Within 360 days of the initial first determination sampling event:

(1) Establish background concentrations for any constituents detected pursuant to subdivision 2 a of this subsection.

(a) A minimum of ~~four~~ eight independent samples from each well (background and downgradient) shall be collected and analyzed to establish background concentrations for the detected constituents using the procedures in subsection D of this section.

(b) In those cases where new wells are installed downgradient of waste disposal units that already have received waste, but these wells have not yet undergone their initial sampling

event, collection of ~~four independent~~ samples for background development will not be required.

(2) Within 30 days of completing the background calculations required under subdivision 2 b (1) (a) of this subsection, submit a first determination report, signed by a qualified groundwater scientist, to the department which must include a summary of the background concentration data developed during the background sampling efforts as well as the statistical calculations for each constituent detected in the groundwater during the background sampling events.

c. Semi-annual sampling and analysis. Within 90 days of the last sampling event during the background-establishing period and at least semi-annually thereafter, sample each monitoring well in the compliance network for analysis of the constituents in Table 3.1 ~~Column~~ Columns A and C.

d. Evaluation and response. Upon determination of site background under subdivision 2 b (1) (a) of this subsection, the results of all subsequent first determination monitoring events shall be assessed as follows:

(1) If no Table 3.1 ~~Column~~ Columns A and C constituents are found to have entered the groundwater at statistically significant levels over background, the owner or operator shall:

(a) Remain in first determination monitoring; and

(b) May request the director delete any Table 3.1 ~~Column~~ Columns A and C constituents from the semi-annual sampling list if the owner or operator demonstrates that the proposed deleted constituents are not reasonably expected to be in or derived from the waste.

(2) If the owner or operator recognizes a statistically significant increase over background for any Table 3.1 ~~Column~~ Columns A or C constituent, within 14 days of this finding, the owner or operator shall notify the department identifying the Table 3.1 ~~Column~~ Columns A or C constituents that have exceeded background levels. The notification will include a statement that within 90 days the owner or operator shall:

(a) Initiate a Phase II sampling program; or

(b) Submit an Alternate Source Demonstration under subdivision A 5 of this section.

(3) If a successful demonstration is made and approved within the timeframes established under subdivision A 5 of this section, the owner or operator may remain in First Determination monitoring. The director may approve a longer timeframe for completion of actions under subdivision A 5 with appropriate justification.

(4) If a successful demonstration is not made and approved within the timeframes established under subdivision A 5 of this section, the owner or operator shall initiate Phase II monitoring in accordance with the timeframes in subdivision C 3 of this section. ~~The director may approve a longer timeframe with appropriate justification.~~

### 3. Phase II monitoring.

a. Sampling requirements. The owner or operator shall:

(1) Within 90 days of noting the exceedance over background determined under subdivision C 2 d of this section, sample the groundwater in all monitoring wells installed under subdivision A 3 a of this section for all Table 3.1 ~~Column~~ Columns B and C constituents;

(2) After completing the initial Phase II sampling event, continue to sample and analyze groundwater on a semi-annual basis within the Phase II monitoring program;

b. Background development. If no additional Table 3.1 ~~Column~~ Columns B or C constituents are detected other than those previously detected under Column A sampling, which already have established their background levels, the owner or operator shall follow the requirements under subdivision 3 c of this subsection regarding groundwater protection standard establishment while continuing to sample for the Table 3.1 Column A list on a semi-annual basis.

c. If one or more additional Table 3.1 ~~Column~~ Columns B and C constituents are detected during the initial Phase II sampling event:

(1) Within 360 days, establish a background value for each additional detected Table 3.1 ~~Column~~ Columns B and C constituent.

(2) Submit a Phase II Background report within 30 days of completing the background calculations including a summary of the background concentration data for each constituent detected in the groundwater during the Table 3.1 ~~Column~~ Columns B and C background sampling events.

(3) If any detected Table 3.1 Column B constituent is subsequently not detected for a period of two years, the owner or operator may petition the director to delete the constituent from the list of detected Table 3.1 ~~Column~~ Columns B and C constituents that must be sampled semi-annually.

e. d. Establishment of groundwater protection standards. No later than:

(1) Thirty days after submitting the Phase II Background report required under the provisions of subdivision 3 b (2) of this subsection, or within 30 days of obtaining the results from the initial Table 3.1 ~~Column~~ Columns B and C sampling event indicating no further sampling for background determination is necessary, the owner or operator shall propose a groundwater protection standard for all detected Table 3.1 constituents.

(2) The groundwater protection standard proposed shall be established in a manner consistent with the provisions in subdivision A 6 of this section.

e. e. Groundwater monitoring plan. No later than 60 days after establishment of groundwater protection standards in accordance with subdivision A 6 of this section, the owner or operator shall submit an updated Groundwater Monitoring Plan that details the site monitoring well network and sampling and analysis procedures undertaken during groundwater monitoring events. The department may waive the requirement for an updated plan if the Groundwater Monitoring Plan included in the landfill's permit reflects current site conditions in accordance with the regulations.

~~(1) No later than 30 days after the submission of the Groundwater Monitoring Plan, the owner or operator shall request a permit modification to incorporate the updated plan and related groundwater monitoring modules into the landfill's permit in accordance with 9VAC20-81-600.~~

~~(2) If the 30-day timeframe specified in subdivision 3 d (1) of this subsection is exceeded, the director will modify the permit in accordance with 9VAC20-81-600 E.~~

e. f. Evaluation and response. After each subsequent Phase II monitoring event following establishment of groundwater protection standards, the concentration of Table 3.1 ~~Column~~ Columns B and C constituents found in the groundwater at each monitoring well installed pursuant to subdivision A 3 a of this section will be evaluated against the groundwater protection standards. The evaluation will be presented to the department in a semi-annual Phase II report. The evaluation will be as follows:

(1) If all Table 3.1 constituents are shown to be at or below background values at all downgradient compliance wells, using the statistical procedures in subsection D of this section, for two consecutive Table 3.1 ~~Column~~ Columns B and C sampling events, the owner or operator shall notify the director of this finding in the semi-annual report and may return to first determination monitoring;

(2) If any Table 3.1 ~~Column~~ Columns B and C constituents at all downgradient compliance wells are found to be above background values, but are below the established groundwater protection standard using the statistical procedures in subsection D of this section, the owner or operator shall continue semi-annual Phase II monitoring and present the findings in a semi-annual report;

(3) If one or more Table 3.1 ~~Column~~ Columns B and C constituents are found at any compliance well above the established groundwater protection standard using the statistical procedures in subsection D of this section, the owner or operator shall:

(a) Notify the department within 14 days of this finding. The notification will include ~~a statement that within 90 days the owner or operator will either: (i) undertake the characterization and assessment actions required under 9VAC20-81-260 C 1; or (ii) submit an alternate source demonstration as specified in subdivision A 5 of this section. If a successful demonstration is made within 90 days, the owner or operator may continue monitoring in accordance with Phase II monitoring program. If the 90-day period is exceeded, the owner or operator shall comply with the timeframes of 9VAC20-81-260 C unless the director has granted an extension to those timeframes; and (i) the wells in which the exceedance was identified and the constituent names; and (ii) a statement that within 90 days the owner or operator will either undertake the characterization and assessment actions required under 9VAC20-81-260 C 1 or submit an alternate source demonstration as specified in subdivision A 5 of this section.~~

(b) If a successful demonstration is made within 90 days, the owner or operator may continue monitoring in accordance with the Phase II monitoring program. If the 90-day period is exceeded, the owner or operator shall comply with the timeframes of 9VAC20-81-260 C unless the director has granted an extension to those timeframes; and

(c) Present the findings sampling results in the semi-annual report.

#### D. Statistical methods and constituent lists.

1. Acceptable test methods. The following statistical test methods may be used to evaluate groundwater monitoring data:

a. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean

levels for each constituent.

b. An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

c. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

d. A control chart approach that gives control limits for each constituent.

e. Another statistical test method that meets the performance standards specified below. Based on the justification submitted to the department, the director may approve the use of an alternative test. The justification must demonstrate that the alternative method meets the performance standards in subdivision 2 of this subsection.

2. Performance standards. Any statistical method chosen by the owner or operator shall comply with the following performance standards, as appropriate:

a. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of monitoring parameters or constituents. If the distribution is shown by the owner or operator to be inappropriate for a normal theory test, then the data shall be transformed or a distribution-free theory test shall be used. If the distributions for the constituents differ, more than one statistical method may be needed.

b. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment-wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained.

c. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

d. If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

e. The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any estimated quantitation limit (EQL) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the landfill.

f. If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

E. Recordkeeping and reporting.

1. Records pertaining to groundwater monitoring activities shall be retained at a specified location by the owner or operator throughout the active life and ~~post-closure~~ post-closure care period of the landfill, and shall include at a minimum:

a. All historical groundwater surface elevation data obtained from wells installed pursuant to subdivision A 3 a of this section;

b. All historical laboratory analytical results for groundwater sampling events required under the groundwater monitoring programs as described in this section;

c. All records of well installation, repair, or abandonment actions;

d. All department correspondence to the landfill; and

e. All approved variances, well subsets, wetlands, or other such ~~director/department~~ director or department approvals.

2. Reporting requirements.

a. Annual report.

(1) An Annual Groundwater Monitoring Report shall be submitted by the owner or operator to the department no later than 120 days from the completion of sampling and analysis conducted under subdivision A 4 h of this section for the second semi-annual event or fourth quarterly event during each calendar year and shall be accompanied by:

- (a) A signature page; and
  - (b) A completed QA/QC DEQ Form ARSC-01.
- (2) The technical content of the annual report shall at a minimum, contain the following topical content:
- (a) The landfill's name, type, permit number, current owner or operator, and location keyed to a USGS topographic map;
  - (b) Summary of the design type (i.e., lined versus unlined), operational history (i.e., trench fill versus area fill), and size (acres) of the landfill including key dates such as beginning and termination of waste disposal actions and dates different groundwater monitoring phases were entered;
  - (c) Description of the surrounding land use noting whether any adjoining land owners utilize private wells as a potable water source;
  - (d) A discussion of the topographic, geologic, and hydrologic setting of the landfill including a discussion on the nature of the uppermost aquifer (i.e., confined versus unconfined) and proximity to surface waters;
  - (e) A discussion of the monitoring wells network noting any modifications that were made to the network during the year or any nonperformance issues and a statement noting that the monitoring well network meets (or did not meet) the requirements of subdivision A 3 of this section;
  - (f) A listing of the groundwater sampling events undertaken during the previous calendar year;
  - (g) A table listing the constituents [ identified ] [ detected ] during the year's sampling events, their concentrations at the respective monitoring well, and if applicable, the related groundwater protection standard in effect during the sampling event;
  - ~~(g)~~ (h) A historical table listing the detected constituents, and their concentrations identified in each well during the sampling period; and
  - ~~(h)~~ (i) Evaluations of and appropriate responses to the groundwater elevation data; groundwater flow rate as calculated using the prior year's elevation data; groundwater flow direction (as illustrated on a potentiometric surface map); and sampling and analytical data obtained during the past calendar year.

b. Semi-annual or quarterly report.

(1) After each sampling event has been completed for the ~~4<sup>st</sup>~~ first semi-annual or first, second and third quarterly groundwater sampling events, a semi-annual or quarterly monitoring report shall be submitted under separate cover by the owner or operator to the department no later than 120 days from the completion of sampling and analysis conducted under subdivision A 4 h of this section, unless as allowed under a director-approved extension. The report shall at a minimum contain the following items:

- (a) Signature page signed by a professional geologist or qualified groundwater scientist;
  - (b) Landfill name and permit number;
  - (c) Statement noting whether or not all monitoring points within the permitted network installed to meet the requirements of subdivision A 3 a of this section were sampled as required under subdivision B 2 or 3 or C 2 or 3 during the event;
  - (d) Calculated rate and direction of groundwater flow as calculated using information obtained during the sampling period as required under subdivision A 4 c of this section; ~~(e) The groundwater flow direction as determined during the sampling period as required under subdivision A 4 c of this section. This information shall be presented as in either plain text within the report or graphically as a potentiometric surface map;~~
  - (f) ~~(e)~~ Statement noting whether or not there were statistically significant increases over background or groundwater protection standards during the sampling period, the supporting statistical calculations, and reference to the date the director was notified of the increase pursuant to timeframes in subdivision B 2 or 3 or C 2 or 3, if applicable;
  - ~~(g)~~ (f) Copy of the full Laboratory Analytical Report including dated signature page (laboratory manager or representative) to demonstrate compliance with the timeframes of subdivision A 4 h of this section. ~~The department will accept the lab report in CD-ROM format.~~
- (2) In order to reduce the reporting burden on the owner or operator and potential redundancy

within the operating record, a discussion of the second semi-annual or fourth quarterly sampling event results may be presented in the Annual Report submission.

c. Other submissions. Statistically significant increase notifications, well certifications, the first determination report, alternate source demonstration, nature and extent study, assessment of corrective measures, presumptive remedy proposal, corrective action plan or monitoring plan, or other such report or notification types as may be required under 9VAC20-81-250 or 9VAC20-81-260, shall be submitted in a manner which achieves the timeframe requirements as listed in 9VAC20-81-250 or 9VAC20-81-260.

TABLE 3.1  
~~Ground Water~~ Ground Water Solid Waste Constituent Monitoring

Column A – Common Name <sup>1, 2</sup>	Column B – Common Name <sup>1, 2</sup>
	Acenaphthene
	Acenaphthylene
Acetone	Acetone
	Acetonitrile; Methyl cyanide
	Acetophenone
	2-Acetylaminofluorene; 2-AAF
	Acrolein
Acrylonitrile	Acrylonitrile
	Aldrin
	Allyl chloride
	4-Aminobiphenyl
	Anthracene
Antimony	Antimony
Arsenic	Arsenic
Barium	Barium
Benzene	Benzene
	Benzo[a]anthracene; Benzanthracene
	Benzo[b]fluoranthene
	Benzo[k]fluoranthene
	Benzo[ghi]perylene
	Benzo[a]pyrene
	Benzyl alcohol
Beryllium	Beryllium
	alpha-BHC
	beta-BHC
	delta-BHC

	gamma-BHC; Lindane
	Bis(2-chloroethoxy)methane
	Bis(2-chloroethyl) ether; Dichloroethyl ether
	Bis(2-chloro-1-methylethyl) ether; 2, 2'-Dichlorodiisopropyl ether; DCIP
	Bis(2-ethylhexyl)phthalate
Bromochloromethane;.Chlorobromomethane	Bromochloromethane;.Chlorobromomethane
Bromodichloromethane;.Dibromochloromethane	Bromodichloromethane;.Dibromochloromethane
Bromoform; Tribromomethane	Bromoform; Tribromomethane
	4-Bromophenyl phenyl ether
	Butyl benzyl phthalate; Benzyl butyl phthalate
Cadmium	Cadmium
Carbon disulfide	Carbon disulfide
Carbon tetrachloride	Carbon tetrachloride
	Chlordane
	p-Chloroaniline
Chlorobenzene	Chlorobenzene
	Chlorobenzilate
	p-Chloro-m-cresol; 4-Chloro-3-methylphenol
Chloroethane; Ethyl chloride	Chloroethane; Ethyl chloride
Chloroform; Trichloromethane	Chloroform; Trichloromethane
	2-Chloronaphthalene
	2-Chlorophenol
	4-Chlorophenyl phenyl ether
	Chloroprene
Chromium	Chromium
	Chrysene
Cobalt	Cobalt
Copper	Copper
	m-Cresol; 3-methylphenol
	o-Cresol; 2-methylphenol
	p-Cresol; 4-methylphenol
	Cyanide
	2,4-D; 2,4-Dichlorophenoxyacetic acid

	4,4'-DDD
	4,4'-DDE
	4,4'-DDT
	Diallate
	Dibenz[a,h]anthracene
	Dibenzofuran
Dibromochloromethane; Chlorodibromomethane	Dibromochloromethane; Chlorodibromomethane
1,2-Dibromo-3-chloropropane; DBCP	1,2-Dibromo-3-chloropropane; DBCP
1,2-Dibromoethane; Ethylene dibromide; EDB	1,2-Dibromoethane; Ethylene dibromide; EDB
	Di-n-butyl phthalate
o-Dichlorobenzene; 1,2-Dichlorobenzene	o-Dichlorobenzene; 1,2-Dichlorobenzene
	m-Dichlorobenzene; 1,3-Dichlorobenzene
p-Dichlorobenzene; 1,4-Dichlorobenzene	p-Dichlorobenzene; 1,4-Dichlorobenzene
	3,3'-Dichlorobenzidine
trans-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene
	Dichlorodifluoromethane; CFC 12;
1,1-Dichloroethane; Ethylidene chloride	1,1-Dichloroethane; Ethylidene chloride
1,2-Dichloroethane; Ethylene dichloride	1,2-Dichloroethane; Ethylene dichloride
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene
trans-1,2-Dichloroethylene	trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene
	2,4-Dichlorophenol
	2,6-Dichlorophenol
1,2-Dichloropropane; Propylene dichloride	1,2-Dichloropropane; Propylene dichloride
	1,3-Dichloropropane; Trimethylene dichloride
	2, 2-Dichloropropane; isopropylidene chloride
	1,1-Dichloropropene
cis-1,3-Dichloropropene	cis-1,3-Dichloropropene
trans-1,3-Dichloropropene	trans-1,3-Dichloropropene
	Dieldrin
	Diethyl phthalate
	O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin

	Dimethoate
	p-(Dimethylamino)azobenzene
	7,12-Dimethylbenz[a]anthracene
	3,3'-Dimethylbenzidine
	2,4-Dimethylphenol; m-Xylenol
	Dimethyl phthalate
	m-Dinitrobenzene
	4,6-Dinitro-o-cresol; 4,6-Dinitro-2-methylphenol
	2,4-Dinitrophenol
	2,4-Dinitrotoluene
	2,6-Dinitrotoluene
	Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol
	Di-n-octyl phthalate
	Diphenylamine
	Disulfoton
	Endosulfan I
	Endosulfan II
	Endosulfan sulfate
	Endrin
	Endrin aldehyde
Ethylbenzene	Ethylbenzene
	Ethyl methacrylate
	Ethylmethanesulfonate
	Famphur
	Fluoranthene
	Fluorene
	Heptachlor
	Heptachlor epoxide
	Hexachlorobenzene
	Hexachlorobutadiene
	Hexachlorocyclopentadiene
	Hexachloroethane

	Hexachloropropene
2-Hexanone; Methyl butyl ketone	2-Hexanone; Methyl butyl ketone
	Indeno[1,2,3-cd]pyrene
	Isobutyl alcohol
	Isodrin
	Isophorone
	Isosafrole
	Kepone
Lead	Lead
	Mercury
	Methacrylonitrile
	Methapyrilene
	Methoxychlor
Methyl bromide; Bromomethane	Methyl bromide; Bromomethane
Methyl chloride; Chloromethane	Methyl chloride; Chloromethane
	3-Methylcholanthrene
Methyl ethyl ketone; MEK; 2-Butanone	Methyl ethyl ketone; MEK; 2-Butanone
Methyl iodide; Iodomethane	Methyl iodide; Iodomethane
	Methyl methacrylate
	Methyl methanesulfonate
	2-Methylnaphthalene
	Methyl parathion; Parathion methyl methyl
4-Methyl-2-pentanone; Methyl isobutyl ketone	4-Methyl-2-pentanone; Methyl isobutyl ketone
Methylene bromide; Dibromomethane	Methylene bromide; Dibromomethane
Methylene chloride; Dichloromethane	Methylene chloride; Dichloromethane
	Naphthalene
	1,4-Naphthoquinone
	1- Naphthylamine
	2-Naphthylamine
Nickel	Nickel
	o-Nitroaniline; 2-Nitroaniline
	m-Nitroaniline; 3-Nitroaniline
	p-Nitroaniline; 4-Nitroaniline
	Nitrobenzene

o-Nitrophenol; 2-Nitrophenol

p-Nitrophenol; 4-Nitrophenol

N-Nitrosodi-n-butylamine

N-Nitrosodiethylamine

N-Nitrosodimethylamine

N-Nitrosodiphenylamine

N-Nitrosodipropylamine; N-Nitroso-N-dipropylamine; Di-propylNitrosamine

N-Nitrosomethylethalamine

N-Nitrosopiperidine

N-Nitrosopyrrolidine

5-Nitro-o-toluidine

Parathion

Pentachlorobenzene

Pentachloronitrobenzene

Pentachlorophenol

Phenacetin

Phenanthrene

Phenol

p-Phenylenediamine

	Phorate
	Polychlorinated biphenyls; PCBS; Aroclors
	Pronamide
	Propionitrile; Ethyl cyanide
	Pyrene
	Safrole
Selenium	Selenium
Silver	Silver
	Silvex; 2,4,5-TP
Styrene	Styrene
	Sulfide
	2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid
	1,2,4,5-Tetrachlorobenzene
1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
	2,3,4,6-Tetrachlorophenol
Thallium	Thallium
	Tin
Toluene	Toluene
	o-Toluidine
	Toxaphene
	1,2,4-Trichlorobenzene
1,1,1-Trichloroethane; Methychloroform	1,1,1-Trichloroethane; Methychloroform
1,1,2-Trichloroethane	1,1,2-Trichloroethane
Trichloroethylene; Trichloroethene <del>ethene</del> <u>ethane</u>	Trichloroethylene; Trichloroethene <u>ethane</u>
Trichlorofluoromethane; CFC-11	Trichlorofluoromethane; CFC-11
	2,4,5-Trichlorophenol
	2,4,6-Trichlorophenol
1,2,3-Trichloropropane	1,2,3-Trichloropropane
	O,O,O-Triethyl phosphorothioate
	sym-Trinitrobenzene

Vanadium	Vanadium
Vinyl acetate	Vinyl acetate
Vinyl chloride; Chloroethene	Vinyl chloride; Chloroethene
Xylene(total)	Xylene(total)
Zinc	Zinc

## NOTES:

[ The requirement to sample for the constituents listed in Column C above shall not become effective until the Virgi

<sup>1</sup>Common names are those widely used in government regulations, scientific publications, and commerce; synonym

<sup>2</sup>The corresponding Chemical Abstracts Service Index name as used in the 9th Collective Index, may be found in A

<sup>3</sup>Chemical Abstracts Service Registry Number. Where "Total" is entered, all species in the groundwater that contain

<sup>4</sup>This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its no  
RN 39638-32-9).

<sup>5</sup>Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma  
chlordane (CAS RN 57-74-9 and CAS RN 12739-03-6).

<sup>6</sup>Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituent  
(CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CA  
and Arclor 1260 (CAS RN 11096-82-5).

<sup>7</sup>Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., c

<sup>8</sup>Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN  
(CAS RN 1330-20-7).

**9VAC20-81-260. Corrective action program.**

A. Corrective action is required whenever one or more groundwater protection standard is exceeded at statistically significant levels. An owner or operator of a landfill may elect to initiate corrective action at any time; however, prior to such initiation, the appropriate groundwater protection standards for all Table 3.1 constituents shall be established consistent with 9VAC20-81-250 A 6. ~~At any time during the corrective action process, the owner or operator may elect to pursue, or the director can determine that, interim measures as defined under subsection F of this section are required in accordance with subdivision E 3 of this section.~~

B. ~~The director may require periodic progress reports when a corrective action program is required but not yet implemented. At any time during the corrective action process:~~

1. The owner or operator may elect to pursue, or the director can determine that, interim measures as defined under subsection F of this section are required in accordance with subdivision E 3 of this section;

2. The director may require periodic progress reports when a corrective action program is required but not yet implemented.

### C. Characterization and assessment requirements.

1. Upon notifying the department that one or more of the constituents listed in Table 3.1 Column B has been detected at a statistically significant level exceeding the groundwater protection standards, the owner or operator shall, unless department approval of an Alternate Source Demonstration has been received as noted under 9VAC20-81-250 B 3 f (3) (a) (ii) or 9VAC20-81-250 C 3 e (3) (a) (ii):

a. Characterization. Within 90 days, install additional monitoring wells as necessary sufficient to define the vertical and horizontal extent of the release of constituents at statistically significant levels exceeding the groundwater protection standards including the installation of at least one additional monitoring well at the facility boundary in the direction of contaminant migration.

b. Notification. Notify all persons who own the land or reside on the land that directly overlies any part of the release if that contaminants, including their names and concentrations, have migrated offsite ~~as indicated by~~ based on the results of sampling of the characterization wells installed under subdivision 1 a of this subsection. This notification must be made within 15 days of completion of the characterization sampling and analysis efforts.

c. Assessment. Within 90 days, initiate an assessment of corrective measures or a proposal for presumptive remedy.

d. Financial assurance. Within 120 days, provide additional financial assurance ~~in the amount of \$1 million~~ to the department as required by 9VAC20-70-113 using the mechanisms required in 9VAC20-70-140 of the Financial Assurance Requirements for Solid Waste Disposal, Transfer, and Treatment Facilities.

e. Public meeting. Prior to submitting the document required under subdivision 1 f of this subsection, schedule and hold a public meeting to discuss the draft results of the corrective measures assessment or the proposal for presumptive remedy, prior to the final selection of remedy. The meeting shall be held to the extent practicable in the vicinity of the landfill. The process to be followed for scheduling and holding the public hearing is described under subdivision 4 of this subsection.

f. Submission requirements. Within 180 days, submit the completed assessment of corrective measures defined under subdivision 3 of this subsection, or the proposal for presumptive remedies defined under subdivision 2 of this subsection, including any responses to public comments received.

g. Director allowance. The submission timeframe noted in subdivision 1 f of this subsection may be extended by the director for good cause upon request of the owner or operator.

#### 2. Presumptive remedy allowance.

a. Applicability. To expedite corrective action, in lieu of an analysis meeting the requirements of subdivision 3 of this subsection, the owner or operator of any facility monitoring groundwater in accordance with 9VAC20-81-250 C may propose a presumptive remedy for the landfill.

b. Options. The presumptive remedy for solid waste landfills shall be limited to one or more of the following:

- (1) Containment of the landfill mass, including an impermeable cap;
- (2) Control of the landfill leachate;
- (3) Control of the migration of contaminated groundwater;
- (4) Collection and treatment of landfill gas; and
- (5) Reduction of saturation of the landfill mass.

Containment may be selected as a sole or partial remedy until a determination is made under subdivision F 1 of this section that another remedy shall be employed to meet the requirements of subdivision G 1 of this section concerning remediation completion. Upon recognition that presumptive remedies may not be able to achieve the groundwater protection standards, an assessment of corrective measures shall be initiated within 90 days.

c. Restrictions. Presumptive remedies are not applicable to:

- (1) Landfills monitoring groundwater under the Federal Subtitle D equivalent program defined under 9VAC20-81-250 B when the use of the presumptive remedy will be the sole remedy applied to the groundwater release; or
- (2) Landfills that may monitor groundwater under 9VAC20-81-250 C but that exhibit contamination beyond facility boundaries unless the proposed presumptive remedy option under subdivision 2 b of this subsection can be demonstrated to show it will address the reduction of contamination already present beyond the facility boundary, and the demonstration is approved by the department.

d. Submission requirements. Owner or operators who wish to propose use of the presumptive remedy allowance shall submit with the proposal, signed by a qualified groundwater professional, an:

- (1) Assessment of risks resulting from the groundwater contamination identified at the disposal unit boundary ~~and at~~ as well as the permitted facility boundary;
- (2) Evaluation of the ~~current~~ trends in groundwater quality data with respect to site background and the established groundwater protection standards; and
- (3) Anticipated schedule for initiating and completing presumptive remedy-based remedial activities.

e. Implementation. Upon conducting a public meeting as required under subdivision 4 of this subsection, submitting a corrective action monitoring plan meeting subdivision D 1 of this section, and modifying the landfill permit in accordance with 9VAC20-81-600 F 2, the owner or operator may proceed with the implementation of the remedy in accordance with subdivision E 1 of this section.

f. Evaluation and response. The owner or operator shall provide an evaluation of the performance of the implemented presumptive remedy every three years, unless an alternate schedule is approved by the director, in a Corrective Action Site Evaluation report containing, at a minimum, the following information:

- ~~(a)~~ (1) A description of how the presumptive remedy is performing with respect to the conditions in subdivision H 1 of this section;
- ~~(b)~~ (2) Current and historical groundwater data and analysis;
- ~~(c)~~ (3) An evaluation of the changes seen in groundwater contamination after the implementation of the remedy and a projection of when the conditions in subdivision H 1 of this section will be achieved; and
- ~~(d)~~ (4) The progress toward achieving the schedule required in subdivision C 2 d (3) of this section.

### 3. Assessment of corrective measures.

a. Purpose. The assessment shall include an analysis of the effectiveness of several potential corrective measures in meeting all of the requirements and objectives of the remedy as described under this subsection, addressing at least the following:

- (1) The performance, reliability, implementation ease, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
- (2) The time required to begin and complete the remedy;
- (3) The costs of remedy implementation; and
- (4) The institutional requirements such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedies.

b. Requirements. As part of the assessment of corrective measures submitted to the department for review, the owner or operator must demonstrate that one or more possible groundwater remedy has been evaluated for potential application on site. These remedies may include a specific technology or combination of technologies that achieve or may achieve the standards for remedies specified in subdivision 3 c (1) of this subsection given appropriate consideration of the factors specified in subdivision D 1 a of this section.

c. Selection of remedy. As part of submission of the assessment of corrective measures document, the owner or operator shall select a remedy that, at a minimum, meets the standards listed in subdivision H 1 of this section. The selected remedies to be included in the corrective plan shall:

~~(1) The selected remedies to be included in the corrective action plan shall:~~

- ~~(a)~~ (1) Be protective of human health and the environment;
- ~~(b)~~ (2) Attain the groundwater protection standard as specified pursuant to 9VAC20-81-250 A 6;
- ~~(c)~~ (3) Control the sources of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of solid waste constituents into the environment that may pose a threat to human health or the environment; and
- ~~(d)~~ (4) Comply with standards for management of investigatively derived wastes.

d. Evaluation and response. The department shall review the assessment of corrective measures to evaluate the proposed remedy and may require revisions to the assessment. If the assessment is approved ~~without revision~~, the department will notify the owner or operator to

prepare a written corrective action plan based on the proposed remedy and such plan will be submitted within 180 days of the department's notification of approval of the assessment of corrective measures.

4. Public meeting process. As part of the public meeting process completed prior to the submission of a proposal for presumptive remedy or assessment of corrective measures:

a. Newspaper notice. The owner or operator must publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation inviting public comment on the results of the corrective measures assessment or proposal for presumptive remedy as applicable. The notice shall include:

(1) The name of the landfill, its location, and the date, time, and place for the public meeting, and the beginning and ending dates for the 30-day comment period. The public meeting shall be held at a time convenient to the public. The comment period will begin on the date the owner or operator publishes the notice in the local newspaper;

(2) The name, telephone, and address of the owner's or operator's representative who can be contacted by the interested persons to answer questions or where comments shall be sent;

(3) Location where copies of the documentation to be submitted to the department in support of the corrective measures assessment or proposal of presumptive remedy can be viewed by the public and copied prior to the meeting;

(4) A statement indicating that the need to perform the corrective measures assessment or presumptive remedy is a result of a statistically significant increase in one or more groundwater protection standards; and

(5) A statement that the purpose of the public meeting is to acquaint the public with the technical aspects of the proposal, describe how the requirements of these regulations will be met, identify issues of concern, facilitate communication, and establish a dialogue between the permittee and persons who may be affected by the landfill.

b. Document review. The owner or operator shall place a copy of the report and supporting documentation in a location accessible to the public during the public comment period in the vicinity of the proposed landfill.

c. Meeting timeframe. The owner or operator shall hold a public meeting within a timeframe that allows for the submission of a completed assessment of corrective measures or presumptive remedy within 180 days of notifying the department of a groundwater protection standard exceedance or as granted under subdivision 1 g of this subsection. The meeting must be scheduled and held:

(1) No earlier than 15 days after the publication of the notice; and

(2) No later than seven days before the close of the 30-day comment period.

D. Corrective action plan and monitoring plan.

1. The owner or operator shall submit to the department a ~~Corrective Action Plan~~ corrective action plan (CAP) and related ~~Corrective Action Monitoring Plan~~ corrective action monitoring plan (CAMP) consistent with the findings as presented in the assessment of corrective measures required under subdivision C 3 of this section, or proposal for presumptive remedy described under subdivision C 2 of this section.

a. Requirements. In preparing a proposed corrective action plan, the owner or operator will consider the following evaluation factors:

(1) The long-term and short-term effectiveness and protectiveness of the potential remedies, along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(a) Magnitude of reduction of existing risks;

(b) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;

(c) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(d) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;

(e) Time until full protection is achieved;

(f) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;

- (g) Long-term reliability of the engineering and institutional controls; and
  - (h) Potential need for replacement of the remedy.
- (2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:
- (a) The extent to which containment practices will reduce further releases;
  - (b) The extent to which treatment technologies may be used;
  - (c) Magnitude of reduction of existing risks; and
  - (d) Time until full protection is achieved.
- (3) The ease or difficulty of implementing a potential remedy based on consideration of the following types of factors:
- (a) Degree of difficulty associated with constructing the technology;
  - (b) Expected operational reliability of the technologies;
  - (c) Need to coordinate with and obtain necessary approvals and permits from other agencies;
  - (d) Availability of necessary equipment and specialists; and
  - (e) Available capacity and location of needed treatment, storage, and disposal services.
- (4) Practicable capability of the owner or operator, including a consideration of the technical and economic capability. At a minimum the owner or operator must consider capital costs, operation and maintenance costs, net present value of capital and operation and maintenance costs, and potential future remediation costs.
- (5) Ensure that all solid wastes that are managed while undergoing corrective action or an interim measure shall be managed in a manner:
- (a) That is protective of human health and the environment; and
  - (b) That complies with all applicable federal and Virginia requirements.
- (6) The degree to which community concerns raised as the result of the public meeting required by subdivision C 4 of this section are addressed by the potential remedy.
- b. Implementation and completion timeframes. The owner or operator shall specify as part of the selected remedy a schedule for initiating and completing remedial activities. Such a schedule shall require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in this section. The owner or operator shall consider the following factors in determining the schedule of remedial activities:
- (1) Nature and extent of contamination;
  - (2) Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under 9VAC20-81-250 A 6 and other objectives of the remedy;
  - (3) Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
  - (4) Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
  - (5) Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
  - (6) Resource value of the aquifer including:
    - (a) Current and future uses;
    - (b) Proximity and withdrawal rates of users;
    - (c) Groundwater quantity and quality;
    - (d) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to the waste constituents;
    - (e) The hydrological characteristics of the landfill and surrounding land;
    - (f) Groundwater ~~removal~~ extraction and treatment costs; and
    - (g) The cost and availability of alternate water supplies;
  - (7) Practical capability of the owner or operator;
  - (8) Timeframes for periodic progress reports during design, construction, operation, and maintenance. Items to consider when preparing the reports include ~~but are not limited to~~:
    - (a) Progress of remedy implementation;
    - (b) Results of monitoring and sampling activities;

- (c) Progress in meeting cleanup standards;
- (d) Descriptions of remediation activities;
- (e) Problems encountered during the reporting period and actions taken to resolve problems;
- (f) Work ~~for anticipated for completion during the~~ next reporting period;
- (g) Copies of laboratory reports including drilling logs, QA/QC documentation, and field data; and
- (9) Other relevant factors.

c. Corrective action monitoring program. Any groundwater monitoring program to be employed during the corrective action process:

- (1) Shall at a minimum, meet the requirements of the applicable groundwater monitoring program described under 9VAC20-81-250 B 3 or C 3;
- (2) Shall determine the horizontal and vertical extent of the plume of contamination for constituents at statistically significant levels exceeding background concentrations;
- (3) Can be used to demonstrate the effectiveness of the implemented corrective action remedy; and
- (4) Shall demonstrate compliance with the groundwater protection standard established under 9VAC20-81-250 A 6.

2. The proposed corrective action plan shall be submitted to the director for approval. Prior to rendering his approval, the director may:

- a. Request an evaluation of one or more alternative remedies;
- b. Request technical modification of the monitoring program;
- c. Request a change in the time schedule; or
- d. Determine that the remediation of the release of Table 3.1 constituents is not necessary if the owner or operator demonstrates to the satisfaction of the director that:
  - (1) The groundwater is additionally contaminated by substances that have originated from a source other than the landfill in a demonstration meeting the requirements of 9VAC20-81-250 A 5 and those substances are present in concentrations such that cleanup of the release from the landfill would provide no significant reduction in risk to actual or potential receptors;
  - (2) The constituent is present in groundwater that is not currently or reasonably expected to be a source of drinking water and not hydraulically connected with waters to which the constituents are migrating or are likely to migrate in a concentration that would exceed the groundwater protection standards established; A uniform environmental covenant in accordance with the Uniform Environmental Covenants Act Regulation (9VAC15-90) may be accepted for the purposes of restricting contaminated groundwater from being used as a source of drinking water.
  - (3) Remediation of the release is technically impracticable; or
  - (4) Remediation results in unacceptable cross-media impacts.

3. A determination by the director pursuant to subdivision 2 d of this subsection shall not affect the authority of the state to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

4. After an evaluation of the proposed or revised plan, the director will:

- a. Approve the proposed corrective action plan as written or modified by the owner or operator and amend the facility permit in accordance with 9VAC20-81-600 F 3; or;
- ~~b. Approve the proposed corrective action plan as modified by the owner or operator;~~
- ~~c. Proceed with the permit modification process in accordance with 9VAC20-81-600 F 2; or~~
- ~~d. b.~~ Disapprove the proposed corrective action plan and undertake appropriate containment or clean up actions in accordance with subdivision 18 of § 10.1-1402 (48) of the Virginia Waste Management Act.

E. Remedy implementation. Upon completion of the permit modification action described under subdivision D 4 c of this section, the owner or operator shall:

- 1. Monitoring program. Implement a corrective action groundwater monitoring program meeting the requirements of subdivision D 1 c of this section;
- 2. Remedy. Implement the remedy described in the Corrective Action Plan and the Permit as amended under subdivision D 4 c of this section; and

3. Interim measures. Take any interim measures necessary to ensure the protection of human health and the environment as described in subsection F of this section.

#### F. Interim measures.

1. To the greatest extent practicable, interim measures shall be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to meeting the groundwater protection standard.
2. Should the director require interim measures pursuant to this section, the director will notify the owner or operator of the necessary actions required. Such actions will be implemented as soon as practicable in accordance with a schedule as specified by the director.
3. The following factors shall be considered in determining whether interim measures are necessary:
  - a. Timeframes. Time required to develop or implement a final remedy;
  - b. Exposure. Actual or potential exposure of nearby populations or environmental receptors to ~~hazardous groundwater~~ constituents; exceeding groundwater protection standards.
  - c. Drinking water. Actual or potential contamination of drinking water supplies;
  - d. Resource degradation. Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;
  - e. Migration potential. ~~Weather conditions~~ Conditions that may cause the groundwater constituents to further migrate or be released to other media such as surface water;
  - f. Accident. Risks of fire or explosion, or potential for exposure to constituents as a result of an accident or failure of a container or handling system; and
  - g. Other. Situations including the presence of wastes or other contaminants that may pose threats to human health, sensitive ecosystems, and the environment.

#### G. Remedy performance.

1. The owner or operator shall provide an evaluation of the performance of the remedy consistent with the timeframes established in the permit and present the findings in a Corrective Action Site Evaluation report. The evaluation shall describe the progress toward achieving the groundwater protection standards since implementation of the remedy.
2. An owner or operator or the director may determine, based on information developed after implementation of the remedy or other information contained in the evaluation, that compliance with requirements of subdivision H 1 of this section are not being achieved through the remedy selected. In such cases, the owner or operator shall implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under subdivision G 3 of this section.
3. If the owner or operator determines that groundwater protection standards cannot be practically achieved with any currently available methods, the owner or operator shall, within 90 days of recognizing that condition:
  - a. Submit a report, certified by a qualified groundwater scientist, for director approval, that demonstrates that compliance with groundwater protection standards established under 9VAC20-81-250 A 6 cannot be practically achieved with any currently available groundwater remedial methods;
  - b. Upon receiving director approval under subdivision 3 a of this subsection, implement alternate measures to control exposure of humans or the environment to residual contamination that will remain as a result of termination of remedial actions, as necessary to protect human health and the environment;
  - c. Implement alternate measures for removal or decontamination of any remediation-related equipment, units, devices, or structures that are:
    - (1) Technically practicable; and
    - (2) Consistent with the overall objective of the remedy; and
  - d. At least 14 days prior to implementing the alternate measures, submit a request for approval to the director describing and justifying the alternate measures to be applied.

#### H. Remedy completion.

1. The groundwater remedy implemented under corrective action shall be considered complete when:
  - a. The owner or operator complies with the groundwater protection standards at all points within the plume of contamination that lie at or beyond the disposal unit boundary by demonstrating that no Table 3.1 Column B constituents have exceeded groundwater protection standards for a

period of three consecutive years using the appropriate statistical procedures and performance standards as described under 9VAC20-81-250 D; and

b. All other actions required as part of the remedy have been satisfied or completed, and the owner or operator obtains the certification required under subdivision H 2 of this section.

2. Upon completion of the remedy, the owner or operator shall notify the director within 14 days by submitting a certification that the remedy has been completed in compliance with the requirements of the Corrective Action Plan and the permit as modified under subdivision D 4 c of this section.

3. The certification shall be signed by the owner or operator and by a qualified groundwater scientist, and shall include all data relevant to the demonstration of a successful remedy completion in a report titled Corrective Action Completion Report.

4. If the director, based on the review of information presented under subdivision H 3 of this section, determines that:

a. The corrective action remedy has been completed in accordance with the requirements of the Corrective Action Plan, the permit as amended, and subdivision H 1 of this section, the director will release the owner or operator from the requirements for financial assurance for corrective action under 9VAC20-70; or

b. The remedy has not yet achieved completion, the owner or operator shall ~~remain in~~ be required to continue corrective ~~action~~ actions as defined in the solid waste permit and meet the financial assurance requirements until such time as a successful demonstration and certification can be made.

#### Part IV

~~Other Solid Waste Management Facility Standards: Compost Facilities; Solid Waste Transfer Stations; Centralized Waste Treatment Facilities; Materials Recovery Facilities; Waste to Energy; Incineration Facilities; Surface Impoundments and Lagoons; Waste Piles; Remediation Waste Management Units; Landfill Mining; Miscellaneous Units; and Exempt Management Facilities~~

#### **9VAC20-81-300. General.**

A. Any person who designs, constructs, or operates any solid waste treatment or storage facility not otherwise exempt under 9VAC20-81-95 shall comply with the requirements of this part. In addition, this part sets forth conditions that yard waste composting facilities must meet to maintain their exempt status, where applicable, under 9VAC20-81-95 D 6. Further, all applications pursuant to these standards shall demonstrate specific means proposed for compliance with requirements set forth in this part.

B. All facilities, except exempted facilities, shall be maintained and operated in accordance with the permit issued or permit-by-rule status pursuant to this regulation. All facilities shall be maintained and operated in accordance with the approved design and intended use of the facility.

C. Hazardous wastes shall not be disposed or managed in facilities subject to this regulation unless specified in the permit or by specific approval of the ~~executive~~ director.

D. Solid waste management facilities regulated under this part that place solid wastes or residues on site for disposal, or leave such wastes or residues in place after closure, are subject to the provisions of Part III (9VAC20-81-100 et seq.) and Part VIII (9VAC20-81-800 et seq.) of this chapter, as applicable, including:

1. Groundwater monitoring requirements in 9VAC20-81-250 or 9VAC20-81-800;

2. Closure and ~~post-closure~~ post-closure care requirements in 9VAC20-81-160 and 9VAC20-81-170, or 9VAC20-81-800; and

3. Permitting requirements of Part V (9VAC20-81-400 et seq.) of this chapter.

E. All other facilities shall close in accordance with the closure plan prepared per the requirements described in this part and 9VAC20-81-480, as applicable.

F. Control program for unauthorized waste. Facilities managing solid waste per activities exempted under the provisions of 9VAC20-81-95 are not required to implement the control program for unauthorized waste as provided in this section.

1. Solid waste treatment or storage facilities regulated under this part shall implement a control program for unauthorized waste in accordance with the following provisions. The owner or operator of the facility shall:

a. Place a written description of the control program for unauthorized waste in the facility's ~~operating operations~~ manual;

b. Institute a control program (including measures such as signs at all maintained access points

indicating hours of operation and the types of solid waste accepted and not accepted, monitoring, alternate collection programs, passage of local laws, etc.) to assure that only solid waste authorized by the department to be managed at the solid waste management facility is being managed there; and

c. Develop and implement a program to teach the solid waste management facility's staff to recognize, remove, and report receipt of solid waste not authorized by the department to be managed at the solid waste management facilities. Refresher training on the unauthorized waste control program shall be provided on an annual basis (at least once every 12 months).

2. If unauthorized waste is observed in the waste delivered to the facility prior to unloading, the owner or operator may refuse to accept the waste. If the unauthorized waste is observed in the waste delivered to the facility, the owner or operator shall segregate it, notify the generator, document the incident in the operating record, make necessary arrangements to have the material managed in accordance with applicable federal and state laws, and notify the department of the incident in accordance with 9VAC20-81-530 C 3 to include the means of proper handling. If the unauthorized waste is accepted, the owner or operator shall remove it, segregate it, and provide to the department a record identifying that waste and its final disposition. Any unauthorized waste accepted by the owner or operator shall be managed in accordance with applicable federal or state laws and regulations. Unauthorized waste that has been segregated shall be adequately secured and contained to prevent leakage or contamination to the environment. The solid waste management facility owner or operator shall have the unauthorized waste removed or properly managed as soon as practicable, but not to exceed 90 days after discovery. Removal shall be by a person authorized to transport such waste to a waste management facility approved to receive it for treatment, disposal, or transfer.

3. Owners or operators of waste to energy or incinerator facilities receiving waste generated outside of Virginia shall also comply with the increased random inspection provisions in 9VAC20-81-340 ~~E-3~~ G.

G. Solid waste management facilities regulated under this part that store waste tires shall also adhere to the requirements of 9VAC20-81-640 for the waste tire storage.

#### **9VAC20-81-310. Applicability.**

##### A. Solid waste compost facilities.

1. The standards in this part shall apply to owners and operators of facilities producing compost from municipal solid waste/~~refuse~~ waste or refuse or combinations of municipal solid waste/~~refuse~~ with animal manures.

a. Composting facilities that employ the enclosed vessel method are referred to as Type A (confined) compost facilities. Facilities that employ the windrow or aerated static pile method are referred to as Type B compost facilities. The only composting processes that may be employed are those with prior operational performance in the United States. Any other proposed composting process shall conform to the standards contained in 9VAC20-81-395 and will require an experimental solid waste management facility permit.

b. Use of solid waste containing hazardous waste, regulated medical waste, or nonbiodegradable waste is prohibited.

2. The standards contained in this part are not applicable to composting exempt under 9VAC20-81-95.

3. The feedstocks for composting are classified on the basis of the type of waste used in the composting process. The categories of feedstocks are as follows:

a. Category I - Plant or plant-derived preconsumer materials such as:

(1) Agriculture crop residues including, ~~but not limited to~~, harvesting residuals, straw, and cornstalks;

(2) Livestock feed including, ~~but not limited to~~, hay, grain, silage, cottonseed meal, soybean meal;

(3) Nonfood agricultural processing waste including, ~~but not limited to~~, cotton gin trash, wool carding residue, field corn cobs;

(4) Source-separated preconsumer food wastes including ~~but not limited to~~ wholesale and retail market residuals (e.g., overripe, damaged, or otherwise rejected fruit or vegetables, food preparation wastes including prepared but unserved foods) and institutional kitchen culls;

(5) Food processing wastes including culls, peelings, hulls, stems, pits, seed, pulp, shucks, nut shells, apple pomace, corn cobs, cranberry filter cake, olive husks, potato tops, cocoa shells, fruit and vegetable processing waste, rejected products, and bakery wastes;

(6) Source-separated clean waste paper;

(7) Vegetative waste; and

(8) Yard waste.

b. Category II - Animal-derived waste material such as:

(1) Dairy processing wastes including ~~but not limited to~~ spoiled milk, cheese, curd, and yogurt.

(2) Fish processing wastes including ~~but not limited to~~ eggs, fish gurry and racks, clam bellies, fish shells, fish processing sludge, fish breading crumbs, mussel, crab, lobster, and shrimp wastes.

c. Category III - Animal and postconsumer food wastes with pathogen potential such as:

(1) Source-separated wastes including ~~but not limited to~~ restaurant waste, institutional kitchen wastes, plate scrapings;

(2) Animal manures including ~~but not limited to~~ spoiled stable straw bedding, livestock feedlot, holding pen and cage scrapings, dairy manure semi-solids, poultry litter and manure; ~~and~~

(3) Rendered animals; ~~and~~

(4) Compostable or [ biodegradable food containers and utensils. ] [ certified compostable products as defined in this regulation. ]

d. Category IV - Other wastes such as:

(1) Nonrendered animal meat waste including ~~but not limited to~~ animal carcasses, slaughterhouse waste, paunch manure;

(2) Mixed nonsource separated organic wastes including ~~but not limited to~~ municipal solid waste; and

(3) Industrial sludge.

B. Solid waste transfer stations. The standards in this part shall apply to owners and operators of solid waste transfer stations.

C. Centralized waste treatment facilities. The standards in this part shall apply to owners and operators of solid waste management facilities who operate a treatment system to solidify nonhazardous solid waste to meet the disposal criteria of 9VAC20-81-140 where the waste is generated offsite, and such treatment system must have no discharge. The requirements of this section shall not apply to solidification operations at active landfills that are authorized in the landfill's solid waste permit.

D. Materials recovery facilities.

1. The standards in this part shall apply to owners and operators of solid waste management facilities that operate to reclaim solid waste.

2. The regulations of this part do not apply to:

a. The landfill gas recovery systems operated at active and closed solid waste disposal facilities that are regulated under 9VAC20-81-200;

b. The storage and treatment facilities associated with the management of materials conditionally exempt from this chapter on the basis of 9VAC20-81-95 F;

c. The facilities that use materials in a manner that constitutes disposal that are regulated under Part VI (9VAC20-81-610 et seq.) of this chapter; or

d. The disposal of residues from the materials recovery facilities that is regulated under Part III (9VAC20-81-100 et seq.) of this chapter.

E. Waste to energy and incineration facilities.

1. The standards in this part shall apply to owners and operators of solid waste and process residue storage and handling facilities associated with the energy recovery from or incineration of solid wastes.

2. The regulations of this part do not apply to:

a. The design and operation of the combustor units regulated by the Air Pollution Control Board; or

b. The disposal of residues from the waste to energy or incineration facilities that is regulated under Part III (9VAC20-81-100 et seq.) of this chapter.

F. Surface impoundments and lagoons.

1. Lagoons and surface impoundments are regulated under State Water Control Law. During the operating life of these facilities, this chapter does not apply. If the operator intends to close such a facility by burial of sludges and residue in place, this chapter shall not apply where the regulating agency establishes the closure requirements in accordance with water pollution control regulations. The standards in this section shall apply to owners and operators of lagoons and surface impoundments only if new wastes, not contained in the lagoon or impoundment, are proposed to be

disposed with the residue. In those cases, the operation and closure of the facility constitutes construction and operation of a landfill and must be accomplished as specified in Part III (9VAC20-81-100 et seq.) of this chapter.

2. Leachate lagoons are regulated under Part III (9VAC20-81-100 et seq.) of this chapter and are subject to the requirements for liners in 9VAC20-81-210 C.

3. Notwithstanding the provisions of subdivision 1 of this subsection, this chapter, in accordance with 9VAC20-81-45, applies to CCR surface impoundments in addition to the requirements under the State Water Control Law.

#### G. Waste piles.

1. The standards in this part shall apply to owners and operators of facilities that store or treat nonputrescible solid waste in piles.

2. Owners or operators of waste piles that will be closed with wastes left in place are subject to regulations contained in Part III (9VAC20-81-100 et seq.) of this chapter.

3. This part does not apply if materials will be actively composted according to all the requirements for compost facilities in Part IV (9VAC20-81-300 et seq.) of this chapter.

4. The regulations in this part do not apply to the management of industrial co-products in piles. A material shall be considered an industrial co-product if a demonstration can be made consistent with 9VAC20-81-95 or 9VAC20-81-97 that the material is not a solid waste.

5. The regulations in this part do not apply to active logging operations subject to regulation under the provisions of §§ 10.1-1181.1 and 10.1-1181.2 of the Code of Virginia.

#### 9VAC20-81-320. Siting requirements.

A. The siting of all compost facilities, solid waste transfer stations, centralized waste treatment facilities, materials recovery facilities, waste to energy and incineration facilities, and waste piles shall be governed by the standards as set forth in this section.

B. Facilities shall be adjacent to or have direct access to roads that are paved or surfaced and capable of withstanding anticipated load limits. Solid waste management facilities storing or treating solid waste in piles such as but not limited to compost facilities and waste piles may also have direct access to gravel roads.

C. Facilities shall not be sited or constructed in areas subject to base floods. For materials recovery facilities, this siting prohibition does not apply to facilities recovering materials from industrial wastewater received from offsite.

D. No facility activity shall be closer than:

1. 50 feet to its property boundary;

2. 200 feet to any residence, a health care facility, school, recreational park area, or similar type public institution;

3. 50 feet to any perennial stream or river. For materials recovery facilities, this siting prohibition does not apply to those facilities recovering materials from industrial wastewater received from offsite; and

4. For facilities treating or storing solid waste in piles, no closer than 50 feet to any wetland.

E. Sites shall provide room to minimize traffic congestion and allow for safe operation.

F. In addition to subsections A through D of this section, for waste piles, unless the waste piles are located inside or under a structure that provides protection from precipitation so that neither ~~run-off~~ runoff nor leachate is generated, such waste piles shall be provided with an adequate area to allow for proper management in accordance with 9VAC20-81-330 F G and 9VAC20-81-340 F H.

G. In addition to subsections A through D of this section, for compost facilities:

1. Acceptable sites must have area and terrain to allow for proper management of run-on, ~~run-off~~ runoff, and leachate, and to allow for a buffer zone with the minimum size of 100 feet between the property boundary and the actual composting activity.

2. Type B facilities shall not be located in areas that are geologically unstable or where the site topography is heavily dissected.

3. Composting facilities are prohibited on airport property. Off-airport composting facilities; [ except those only composting vegetative waste and yard waste. ] shall be located no closer than the greater of the following distances as defined by the FAA:

a. 1,200 feet from any air operations area [ for compost facilities accepting only yard waste and similar material which are not wildlife attractants ] ; or

b. The distance called for by airport design requirements [ for compost facilities accepting Category I-IV feedstocks which are wildlife attractants. ]

**9VAC20-81-330. Design and construction requirements.**

A. The design and construction of all compost facilities, solid waste transfer stations, centralized waste treatment facilities, materials recovery facilities, waste to energy and incineration facilities, and waste piles shall be governed by the standards as set forth in this section.

A. B. Compost facilities.

## 1. For facilities that will compost only Category I feedstocks:

- a. A handling area and equipment shall be provided to segregate the Category I waste from noncompostable components and to store such components in appropriate containers prior to proper management and disposal.
- b. If the facility is located in any area where the seasonal high water table lies within two feet of the ground surface, the composting and handling areas shall be hard-surfaced and diked or bermed to prevent run-on, collect runoff, and provided with a drainage system to route the collected runoff to a treatment, disposal or holding facility, discharged under a VPDES permit, or recirculated within the composting process.
- c. Engineering controls shall be incorporated into design of facilities located on sites with:
  - (1) Springs, seeps, and other groundwater intrusions;
  - (2) Gas, water, or sewage lines under the active areas; or
  - (3) Electrical transmission lines above or below the active areas.
- d. Areas used for mixing, composting, curing, screening, and storing shall be graded to prevent run-on, collect runoff, and provided with a drainage system to route the collected runoff to a treatment, disposal or holding facility, discharged under a VPDES permit, or recirculated within the composting process.
- e. Roads serving the unloading, handling, composting, and storage areas shall be usable under all weather conditions.

2. Facilities for the composting of ~~Category~~ Categories II, III, and IV feedstocks, including those that will mix these feedstocks with Category I feedstocks, shall be provided with:

- a. Covered areas for receiving, segregation, and grading of the waste shall be provided to segregate the waste from noncompostable components and to store such components in properly constructed containers prior to proper management and disposal.
- b. Areas used for mixing, composting, curing, screening, and storing shall be graded to prevent run-on, collect runoff, and provided with a drainage system to route the collected runoff to a treatment, disposal or holding facility, discharged under a VPDES permit, or recirculated within the composting process.
- c. If the facility is located in any area where the seasonal high water table lies within two feet of the ground surface, the composting and handling areas shall be hard-surfaced and diked or bermed to prevent run-on, collect runoff, and provided with a drainage system to route the collected runoff to a treatment, disposal or holding facility, discharged under a VPDES permit, or recirculated within the composting process.
- d. Where any Category IV feedstocks are received, or where more than 1,000 total tons/quarter of ~~Category~~ Categories II and III feedstocks are received, all receiving, mixing, composting, curing, screening, and storing operations shall be provided with one of the following:
  - (1) An asphalt or concrete area that drains directly to a wastewater storage, treatment, or disposal facility;
  - (2) An asphalt, or concrete, and diked or bermed area to prevent entry of run-on or escape of ~~run-off~~ runoff, leachate, or other liquids, and a sump with either a gravity discharge or an adequately sized pump located at the low point of the hard-surfaced area to convey liquids to a wastewater treatment, disposal or holding facility, discharged under a VPDES permit, or recirculated within the composting process;
  - (3) A lime stabilized area may be substituted for the asphalt or concrete specified under subdivision A 2 d (2) of this subsection. The lime stabilized clay/soil area must be a minimum of six inches thick and have a lab-tested permeability of  $1 \times 10^{-7}$  cm/sec; or
  - (4) A 12" compacted gravel pad underlain by a continuous high density polyethylene (HDPE) liner of a minimum 60-mil thickness and equipped with leachate collection above the liner and leak detection below the liner.
- e. Area and equipment shall be provided to segregate nonbiodegradable or otherwise undesirable components from the municipal solid waste to be processed.
- f. For Type B facilities, engineering controls shall be incorporated into design of facilities located

on sites with:

- (1) Springs, seeps, and other groundwater intrusions;
- (2) Gas, water, or sewage lines under the active areas; or
- (3) Electrical transmission lines above or below the active areas.

g. Roads serving the unloading, composting, and storage areas shall be of all-weather construction.

h. Auxiliary power, standby equipment, or contingency arrangements shall be required to ensure continuity of composting operations.

i. For uncovered sites, calculations for sizing of surface water control features will be based on a rainfall intensity of one hour duration and a 10-year return period.

~~B.~~ C. Solid waste transfer stations.

1. An all-weather road suitable for loaded collection vehicles shall be provided from the entrance gate to the unloading, receiving, or tipping area.

2. The floors in the unloading, receiving, or tipping areas shall be constructed of easily cleanable materials, provided with a water supply for transfer area cleaning purposes, and equipped with drains or pumps, or equivalent means to facilitate the removal of wastewater to proper storage or disposal.

3. Truck wheel curbs or other safety facilities shall be provided to prevent backing or falling into a pit if one is used for tipping.

4. The transfer unloading, receiving, tipping, and storage structures, buildings, and ramps shall be of a material that can be easily cleaned.

5. Internal areas for unloading and management of incoming solid waste shall be provided to ensure an environmentally sound operation and afford space to allow for proper processing based on the facility's daily process rate.

~~5~~ 6. Onsite queuing capacity shall be provided for the expected traffic so that the waiting collection vehicles do not back up onto the public road.

~~6~~ 7. Portions of the transfer station used solely for storage of household hazardous waste shall have a containment system designed in accordance with 40 CFR 267.173, as amended. The requirements of this section do not apply to household hazardous waste packaged in U.S. Department of Transportation-approved shipping containers and removed from the site within 10 days from the date of collection.

~~7.~~ 8. If the transfer station is used to store waste materials, storage units shall be designed to reduce the potential for fires and migration of vectors, and to prevent escape of wastes, wash waters, odors, dust, and litter from the facility.

~~G.~~ D. Centralized waste treatment facilities.

1. A centralized waste treatment facility shall be so designed to reduce the potential of elements that may degrade health or the environment from crossing the facility boundaries. Such elements include fire, vectors, wash water, odor, and litter.

2. An all-weather road suitable for loaded delivery vehicles shall be provided from the entrance gate to the unloading area.

3. Mixing tanks shall be located inside a building or have covers provided that can be deployed rapidly under the threat of inclement weather.

4. Tanks constructed in the ground shall be placed a minimum of two feet above the seasonal high ground-water table and a minimum of two feet vertical separation shall be maintained between bedrock and the lowest point of the tank.

5. Tanks constructed in the ground shall provide secondary containment and have a witness zone to immediately detect leakage. Leaks shall be repaired immediately and the department shall be notified within 24 hours.

6. Tanks constructed above ground shall allow easy access beneath the tank to allow quick leak detection and cleaning. Leaks shall be repaired immediately and the department shall be notified within 24 hours.

7. Mixing tanks shall be underlain and/or surrounded by an apron consisting of hard impermeable surface that is easily cleanable and prevent runoff of any spills.

8. Internal storage areas for processed waste shall be provided to insure an environmentally sound operation and afford space to allow for proper processing ~~of maximum anticipated daily incoming solid waste~~ based on the facility's daily process rate.

9. Facility shall be designed in a manner that will prevent the migration of odors and dust offsite.

The facility must meet all applicable requirements of the regulations of the Air Pollution Control Board where air releases are contemplated.

10. Onsite queuing capacity shall be provided for the expected traffic so that the waiting delivery vehicles do not back up onto the public road.

11. Facilities shall be designed with perimeter security fencing, or natural barriers, and gate controls to prevent unauthorized access to the site.

D. E. Materials recovery facilities.

1. A materials recovery facility shall be so designed to reduce the potential of elements that may degrade health or the environment from crossing the facility boundaries. Such elements include fire, vectors, wash water, odor, and litter.

2. An all-weather road suitable for loaded delivery vehicles shall be provided from the entrance gate to the unloading area.

3. The unloading, receiving, or tipping areas shall be constructed of impervious materials, provided with a water supply for storage and transfer area cleaning purposes, and equipped with drains or pumps, or equivalent means to facilitate the removal of wastewater to proper storage or disposal.

4. Truck wheel curbs or other safety facilities shall be provided to prevent backing or falling into a pit if one is used for tipping.

5. The unloading, tipping, receiving, and storage structures, buildings, and ramps shall be of material that can be easily cleaned.

6. Internal storage areas for unprocessed incoming solid waste will be provided to ensure an environmentally sound operation and afford space to allow for proper processing ~~of maximum anticipated daily incoming solid waste~~ based on the facility's daily process rate.

7. Facility shall be designed in a manner that will prevent the migration of odors and dust offsite. The facility must meet all applicable requirements of the regulations of the Air Pollution Control Board where air releases are contemplated.

8. Onsite queuing capacity shall be provided for the expected traffic so that the waiting delivery vehicles do not back up onto the public road.

9. Fire alarm and protection systems capable of detecting, controlling, and extinguishing any and all fires shall be provided.

10. Facilities shall be designed with perimeter security fencing, or natural barriers, and gate controls to prevent unauthorized access to the site.

11. The owner or operator of a material recovery facility engaged in bioremediation shall design, construct, and maintain systems for application of nutrients, provision of air or oxygen, and regulation of moisture content designed to promote aerobic microbiological degradation. At a minimum the systems shall be:

a. Designed to be chemically resistant to any waste or leachate that may come into contact with the system;

b. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and by any equipment used in the area; and

c. Designed to provide operational temperatures that are favorable to the bioremediation process.

12. A design description manual will be prepared and submitted to the department describing or showing:

a. The process rate of the facility;

b. The designation of normal loading, unloading, and storage areas and their capacities;

c. The designation of emergency loading, unloading, storage, or other disposal capabilities to be used when the facility system downtime exceeds 24 hours;

d. The designation of alternate disposal areas or plans for transfer of solid wastes in the event facility downtime exceeds 72 hours;

e. The expected daily quantity of waste residue generation;

f. The proposed ultimate disposal location for all facility-generated waste residues including, ~~but not limited to,~~ residues and bypass material, byproducts resulting from air pollution control devices, and the proposed alternate disposal locations for any unauthorized waste types, that may have been unknowingly accepted. The schedule for securing contracts for the disposal of these waste types at the designated locations shall be provided;

g. A descriptive statement of any materials use, reuse, or reclamation activities to be operated in conjunction with the facility, either on the incoming solid waste or the ongoing residue;

h. Plan views showing building dimensions, building setbacks, side and rear distances between the proposed structure and other existing or proposed structures, roadways, parking areas, and site boundaries; and

i. Interior floor plans showing the layout, profile view, and dimensions of the processing lines, interior unloading, sorting, storage, and loading areas as well as other functional areas.

E. F. Waste to energy and incineration facilities.

1. The solid waste and combustion residue storage and handling facilities associated with a waste to energy or incineration system shall be designed to reduce the potential of elements that may degrade health or the environment from crossing the facility boundaries. Such elements include fire, vectors, wash water, odor, and litter.

2. An all-weather road suitable for loaded delivery vehicles shall be provided from the entrance gate to the unloading, receiving, or tipping area.

3. All tipping floors, sorting pads, waste storage areas, bunkers, and pits shall be constructed of concrete or other similar quality material that will withstand heavy vehicle usage. Floor drains shall be provided in all such areas and surfaces shall be graded to facilitate wash down operations. Floor drains shall be designed to discharge wastewater into a collection system for proper disposal. In those cases where waste or residue storage pits are to be utilized, the base and sidewalls shall be designed to prevent groundwater intrusion.

4. Truck wheel curbs or other safety facilities shall be provided to prevent backing or falling into a pit if one is used for tipping.

5. The unloading, receiving, and tipping structures; buildings; and ramps shall be of material that can be easily cleaned.

6. Facilities shall be designed with internal storage area for unprocessed incoming solid waste, facility process waste residues and effluents, and recovered materials, if applicable. The design shall allow for, at a minimum, three days of storage ~~at maximum anticipated loading rates~~ based on the facility's daily process rate.

7. The facility shall be designed in a manner that will prevent the migration of odors and dust offsite.

8. Onsite queuing capacity shall be provided for the expected traffic so that the waiting delivery vehicles do not back up onto the public road.

9. Fire alarm and protection systems capable of detecting, controlling, and extinguishing any and all fires shall be provided.

10. Facilities shall be designed with perimeter security fencing and gate controls to prevent unauthorized access to the site and to control the offsite escape of litter.

11. A design description manual will be prepared and submitted to the department describing or showing:

a. The process rate of the facility;

b. The designation of normal loading, unloading, and storage areas and their capacities;

c. The designation of emergency loading, unloading, storage or other disposal capabilities to be used when the facility system downtime exceeds 24 hours;

d. The designation of alternate disposal areas or plans for transfer of solid wastes in the event facility downtime exceeds 72 hours;

e. The expected daily quantity of waste residue generation;

f. The proposed ultimate disposal location for all facility-generated waste residues including, ~~but not limited to,~~ ash residues and bypass material, byproducts resulting from air pollution control devices, and the proposed alternate disposal locations for any unauthorized waste types, which may have been unknowingly accepted. The schedule for securing contracts for the disposal of these waste types at the designated locations shall be provided;

g. A descriptive statement of any materials use, reuse, or reclamation activities to be operated in conjunction with the facility, either on the incoming solid waste or the ongoing residue;

h. Plan views showing building dimensions, building setbacks, side and rear distances between the proposed structure and other existing or proposed structures, roadways, parking areas, and site boundaries; and

i. Interior floor plans showing the layout, profile view, and dimensions of the processing lines, interior unloading, sorting, storage, and loading areas as well as other functional areas.

F. G. Waste piles.

1. The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither ~~run-off~~ runoff nor leachate is generated is not subject to regulation

under subdivision 2 of this subsection, provided that:

- a. Liquids or materials containing free liquids are not placed in the pile;
- b. The pile is protected from surface water run-on by the structure or in some other manner;
- c. The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting;
- d. The pile will not generate leachate through decomposition or other reactions; and
- e. The structures, buildings, and ramps shall be of concrete, brick, or other material that can be easily cleaned.

2. Exposed waste piles.

a. Liners. A waste pile (except for an existing portion of a waste pile) shall have:

(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent soil or groundwater or surface water at any time during the active life (including the closure period) of the waste pile. The liner shall be:

(a) Constructed of materials that have necessary chemical properties, strength, and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

(b) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

(c) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

(2) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the pile. The design and operating conditions shall ensure that the leachate depth over the liner does not exceed one foot at its lowest point. The leachate collection and removal system shall be:

(a) Constructed of materials that are (i) chemically resistant to the waste managed in the pile and the leachate expected to be generated; and (ii) of necessary strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

(b) Designed and operated to function without clogging through the scheduled closure of the waste pile.

b. The owner or operator will be exempted from the requirements of subdivision 2 a of this subsection if the director finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any waste constituents into the groundwater or surface water at any future time. In deciding whether to grant an exemption, the director will consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including attenuating capacity and thickness of the liners and soils present between the pile and groundwater or surface water; and

(4) All other factors that would influence the quality and mobility of the leachate produced and the potential for it to migrate to groundwater or surface water;

c. During construction or installation, liners shall be inspected by the owner's or operator's construction quality assurance personnel for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials).

d. Immediately after construction or installation.

(1) Synthetic liners shall be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

(2) Soil-based liners shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural nonuniformities that may cause an increase in the hydraulic conductivity of the liner.

(3) Any imperfections in the alternate liner design approved by the director will be repaired.

e. The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.

f. The owner or operator shall design, construct, operate, and maintain a ~~run-on~~ runoff management system to collect and control at least the water volume resulting from a 24-hour,

25-year storm.

3. Area, facilities, and equipment shall be provided to segregate undesirable components from the incoming solid waste to be processed.
4. The storage or treatment units shall be designed to prevent fires and migration of vectors, and to prevent escape of wastes, wash waters, waste decomposition odors, dust, and litter from the facility. The storage and treatment units will be designed to withstand the physical, chemical, and biological characteristics of the waste managed.

#### **9VAC20-81-340. Operation requirements.**

A. The operation of all compost facilities, solid waste transfer stations, centralized waste treatment facilities, materials recovery facilities, waste to energy and incineration facilities, and waste piles shall be governed by the standards as set forth in this section. Operations for these facilities will shall be detailed in an operations manual that shall be maintained in the operating record in accordance with 9VAC20-81-485. This operations manual will include an operations plan, an inspection plan, a health and safety plan, an unauthorized waste control plan, and an emergency contingency plan meeting the requirements of this section and 9VAC20-81-485. This manual shall be made available to the department when requested. If The facility shall operate in accordance with the operations manual, and if the applicable standards of this chapter and the facility's operations manual conflict, this chapter shall take precedence.

B. The following requirements are applicable to the operation of all facilities listed in this section in addition to requirements specified in subsections C through H of this section:

1. The facility shall operate under the direct supervision of a waste management facility operator licensed by the Board for Waste Management Facility Operators.
2. The facility shall operate within the approved hours of operation. The facility may request a temporary extension of operating hours [ . ] if necessary [ . ] in order to respond to an emergency or other unusual event.
3. The facility shall not exceed its approved daily process rate or waste storage limits. The facility may request a temporary increase in daily process rate or waste storage limits [ . ] if necessary [ . ] in order to respond to an emergency or other unusual event.
4. The facility shall be operated in a manner that reduces the potential for fires and migration of vectors and prevents escape of wastes, wash waters, odor, dusts, and litter from the facility.
5. All litter and other windblown material from facility operations shall be collected on a weekly basis.
6. The facility shall implement actions detailed in the emergency contingency plan when the types of events anticipated by the plan occur.

#### A C. Compost facilities.

1. For facilities that will compost only Category I wastes: All compost facilities are subject to the following requirements:
  - a. Only solid wastes within the permitted feedstock categories may be accepted.
  - a b. Noncompostable or other undesirable solid waste shall be segregated from the material to be composted. Solid waste that is not composted, salvaged, reused, or sold must be disposed at a permitted solid waste management facility authorized to accept the waste.
  - b. The addition of any other solid waste including but not limited to hazardous waste, regulated medical waste, construction waste, debris, demolition waste, industrial waste, or other municipal solid waste to the Category I waste received at the composting facility is prohibited, except that the materials that are excluded under 9VAC20-81-95 may be combined with Category I waste for the purpose of producing compost under the provisions of this chapter.
  - c. Access to the composting facility shall be permitted only when an attendant is on duty.
  - d. Dust, odors, and vectors shall be controlled so they do not constitute nuisances or hazards. Fugitive dust and mud deposits on main offsite roads and access roads shall be minimized at all times to limit nuisances. Dust shall be controlled to meet the requirements of Article 1 (9VAC5-40-60 et seq.) of Part II of 9VAC5-60 9VAC5-40.
  - e. The owner or operator shall prepare, implement, and enforce a safety program and a fire prevention and suppression program designed to minimize hazards.
  - f. Open burning shall be prohibited on the facility property.
  - g. Leachate or other runoff from the facility shall not be permitted to drain or discharge directly into surface waters, unless authorized by a VPDES permit.
  - h. Designed buffer zones shall be maintained.
  - i. Maintenance and inspections.

- (1) Facility components shall be maintained and operated in accordance with the permit and intended use of the facility.
- (2) Adequate numbers, types, and sizes of properly maintained equipment shall be available at the facility during all hours of operation to prevent curtailment of operations because of equipment failure except under extraordinary conditions beyond the control of the owner or operator of the facility.
- (3) The facility owner or operator shall monitor and inspect the facility for malfunctions, deteriorations, operator errors, and discharges that may cause a release to the environment or a threat to human health. The facility owner or operator shall promptly remedy any deterioration or malfunction of equipment or structures or any other problems revealed by the inspections to ensure that no environmental or human health hazard develops. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.

2. Facilities for the composting of that compost Category II, III, or IV feedstocks, including those that mix these categories with Category I feedstocks, shall be provided with are subject to the following requirements in addition to the requirements of subdivision 1 of this subsection:

~~a. Noncompostable or other undesirable solid waste shall be segregated from the material to be composted. Solid waste that is not composted, salvaged, reused, or sold must be disposed at a permitted solid waste management facility authorized to accept the waste.~~

~~b. a.~~ Products will continue to be considered as solid wastes until the testing indicates that they attain finished compost standards. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity and shall be conducted in a manner consistent with SW-846, as amended, and other applicable standards. The minimum number of samples that shall be collected and analyzed is for the testing required under subdivisions 2 b, 2 c, and 2 d of this subsection are shown in the following table below. Samples to be analyzed for metals shall be composited prior to the analysis.

Minimum Frequency of Analysis	
Amount of finished compost <sup>1</sup> (tons per 365 day period)	Frequency <sup>2</sup>
Less than 320	Once per year.
Equal to or greater than 320 but less than 1,653	Once per quarter (four times per year).
Equal to or greater than 1,653 but less than 16,535	Once per 60 days (six times per year).
Equal to or greater than 16,535	Once per month (12 times per year).
<sup>1</sup> Either the amount of finished compost applied to the land or prepared for sale or give-away for application to the land (dry weight basis).	
<sup>2</sup> After the finished compost has been monitored for two years at the frequency in the above table, the facility may request that the department reduce the frequency of monitoring.	

~~e. b.~~ All finished products will be tested for compost stability using one of the methods listed below in subdivisions 2 b (1) through 2 b (5) of this subsection:

- (1) Temperature decline to near ambient conditions when not the result of improper management of the composting process. Composting records shall indicate schedules for turning, monitoring of moisture within the required range, and mix of composting feedstocks.
- (2) Reheat potential using the Dewar Compost Self-Heating Flask. The results must indicate a stable product. Temperature rise above ambient must not exceed 10°C for stable compost. Very stable compost will not exceed 20°C above ambient.
- (3) Specific oxygen uptake. To be classified as stable the product must have a specific oxygen uptake rate of less than 0.1 milligrams per gram of dry solids per hour.
- (4) Solvita<sup>TM</sup> Compost Maturity Test. To be classified as stable the product must exhibit color equal or greater than six.
- (5) Carbon dioxide evolution. To be classified as stable the product must not evolve more than 1,000 milligrams of carbon dioxide per liter per day.

~~d. c.~~ In addition to testing required of this subsection, finished products produced from any Category Categories III and IV materials will be tested for the presence of ~~the following organisms using the methods indicated below:~~

~~(1) Parasites. The density of viable helminth ova in the finished compost shall be less than one per four grams of total solids (dry weight basis) at the time the finished compost is prepared for sale or give away in a container for application to the land. Viable helminth ova reduction shall be demonstrated by testing the finished compost once per quarter for a period of one year. After the viable helminth ova reduction has been demonstrated for the composting process, additional helminth ova testing will not be required provided the composting operating parameters and incoming waste stream are consistent with the values or ranges of values documented during the initial helminth ova reduction demonstration. If the composting parameters or incoming waste stream change a new viable helminth ova reduction demonstration is required, and~~

~~(2) Bacteria bacteria pathogens. Either the density of fecal coliform in the finished compost shall be less than 1000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the finished compost shall be less than three MPN per four grams of total solids (dry weight basis) at the time the finished compost is prepared for sale or to give away in a container for application to the land.~~

~~(3) Other test methods, or facility operating standards may be used in lieu of the above parasite and pathogen testing requirements as approved by the department.~~

~~e. Metals. d. In addition to the testing requirements contained in this subsection, all finished products produced from Category IV materials shall be analyzed for the metals shown below in the following table. The concentration of contaminants shall not exceed the following levels:~~

Metal	Concentration, mg/kg dry solids
Arsenic	41
Cadmium	21
Copper	1500
Lead	300
Mercury	17
Molybdenum	54
Nickel	420
Selenium	28
Zinc	2,800

~~f. Designed buffer zones shall be maintained.~~

~~g. The owner or operator shall prepare an operation plan that shall include as a minimum:~~

~~(1) The description of types of wastes that will be managed at the facility. This description must properly categorize the compost feedstocks in accordance with 9VAC20-81-310 A 4. If the specific materials are not listed in that section, a discussion will be prepared that compares the materials that the facility will receive with the materials listed in the applicable feedstock category and justifies the categorization of the proposed feedstock. For each type of material an approximate C:N ratio will be provided. The expected quantity of any bulking agent or amendment will be provided (if applicable); and any expected recycle of bulking agent or compost. The plan shall include the annual solid waste input, the service area population (both present and projected if applicable), and any seasonal variations in the solid waste type and quantity;~~

~~(2) A discussion of the composting process including:~~

~~(a) For Type A compost facilities the following will be provided:~~

~~(i) A copy of the manufacturer's operating manual, and drawings and specifications of the composting unit.~~

~~(ii) A discussion of the unit's requirements for power, water supply, and wastewater removal, and the steps taken to accommodate these requirements.~~

~~(b) For Type B compost facilities the following will be provided:~~

~~(i) A description of the configuration of the composting process including compost pile sizing, and orientation, provisions for water supply, provisions for wastewater disposal, and an equipment list.~~

- ~~(ii) A discussion of procedures and frequency for moisture, and temperature monitoring, and aeration.~~
- ~~(iii) A discussion of pile formation, and feedstock proportioning and feedstock preparation;~~
- ~~(3) A discussion of the method and frequency of final product testing in accordance with this subsection will be provided;~~
- ~~(4) A schedule of operation, including the days and hours that the facility will be open, preparations before opening, and procedures followed after closing for the day;~~
- ~~(5) Anticipated daily traffic flow to and from the facility, including the number of trips by private or public collection vehicles;~~
- ~~(6) The procedure for unloading trucks (including frequency, rate, and method);~~
- ~~(7) A contingency plan detailing corrective or remedial action to be taken in the event of equipment breakdown; air pollution (odors); unacceptable waste delivered to the facility; spills; and undesirable conditions such as fires, dust, noise, vectors, and unusual traffic conditions;~~
- ~~(8) Special precautions or procedures for operation during wind, heavy rain, snow, and freezing conditions;~~
- ~~(9) A description of the ultimate use for the finished compost, method for removal from the site, and a plan for use or disposal of finished compost that cannot be used in the expected manner due to poor quality or change in market conditions;~~
- ~~(10) A discussion of inspections in accordance with subdivision 2 h (3) of this subsection; and~~
- ~~(11) A discussion of records to be maintained in accordance with 9VAC20-81-350.~~

#### ~~h. Maintenance.~~

- ~~(1) Facility components shall be maintained and operated in accordance with the permit and intended use of the facility.~~
- ~~(2) Adequate numbers, types, and sizes of properly maintained equipment shall be available at the facility during all hours of operation to prevent curtailment of operations because of equipment failure except under extraordinary conditions beyond the control of the facility's owner or operator.~~
- ~~(3) The facility owner or operator shall monitor and inspect the facility for malfunctions, deteriorations, operator errors, and discharges that may cause a release to the environment or a threat to human health. The facility owner or operator shall promptly remedy any deterioration or malfunction of equipment or structures or any other problems revealed by the inspections to ensure that no environmental or human health hazard develops. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.~~
- ~~(4) The amount of compost stored at the facility shall not exceed the designed storage capacity.~~
- ~~i. Leachate or other runoff from the facility shall not be permitted to drain or discharge directly into surface waters, unless authorized by a VPDES permit.~~

#### ~~B. D. Solid waste transfer stations.~~

- ~~1. No uncontainerized putrescible solid waste shall remain at the transfer station at the end of the working day.~~
- ~~2. A written operating plan shall be prepared covering at the minimum:
 
  - ~~a. Facility housekeeping, procedures for detection of regulated hazardous and medical wastes, onsite traffic control, schedules for waste delivery vehicle flow, wastewater collection, storm water collection, vector control, odor control, noise control, and methods of enforcement of traffic flow plans for the waste delivery vehicles; and/or~~
  - ~~b. The process rate of the facility, the capacities of any waste storage areas, and the ultimate disposal location for all facility-generated waste residue.~~~~
- ~~3. A written contingency plan shall be prepared for a transfer station covering operating procedures to be employed during periods of nonoperation. This plan shall set forth procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities.~~
- ~~4. 2. Leachate and wash water from a transfer station shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES permit issued pursuant to 9VAC25-31.~~
- ~~5. 3. No regulated hazardous wastes shall be accepted for processing unless they are received under the provisions of a hazardous waste permit or they are specifically exempted by the provisions of the Virginia Hazardous Waste Management Regulations (9VAC20-60). Storage of household hazardous waste at facilities designed in accordance with 9VAC20-81-330 B-6 C 7 shall be accomplished in accordance with the requirements of ~~40 CFR 261.173~~ 40 CFR 267.173, as~~

amended. Storage in such facilities may not exceed one year.

4. The floors and ramps in the unloading, receiving, tipping, and storage areas shall be cleaned at least once per week.

5. Floor drains shall be kept free of debris and allow for free draining of liquids.

6. The facility shall maintain the integrity of the tipping floors and ramps as designed, including making repairs as necessary to correct cracking, settlement, or other damage and to prevent liquids from ponding or draining away from the floor drains.

~~C.~~ E. Centralized waste treatment facilities.

1. All incoming waste shall begin treatment at the solidification facility by the end of the working day.

2. Facilities engaged in the solidification of petroleum contaminated sludge shall perform the analyses required by 9VAC20-81-660-~~C~~.

3. A written operating plan shall be prepared covering at the minimum:

a. ~~Facility housekeeping, schedules for waste delivery vehicle flow, wastewater collection, storm water collection, vector control, odor control, and noise control.~~

b. ~~A description of methods to determine the characteristics of the treated waste, frequency of testing and the action the facility owner or operator will take whenever the material fails to meet applicable standards.~~

c. ~~The process rate of the facility, the capacities of any storage areas, and the ultimate disposal location(s).~~

d. ~~For facilities engaged in the reclamation of soil, a description of the methods and frequencies of analysis of the reclaimed product shall be provided as required by 9VAC20-81-660.~~

~~4. A written contingency plan shall be prepared to establish operating procedures to be employed during periods of nonprocessing. This plan shall set forth procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities. The plan will include emergency loading, unloading, storage, transfer, or other disposal capabilities to be used when the facility downtime exceeds 24 hours.~~

~~5. 3.~~ Leachate and wash water from a centralized waste treatment facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES Permit issued pursuant to 9VAC25-31.

~~6. 4.~~ Inspection and leak detection monitoring records shall be maintained and made available upon request for the lifetime of the treatment facility.

5. The floors and ramps in the unloading, receiving, tipping, and storage areas shall be cleaned at least once per week.

6. Floor drains shall be kept free of debris and allow for free draining of liquids.

7. The facility shall maintain the integrity of the tipping floors and ramps as designed, including making repairs as necessary to correct cracking, settlement, or other damage, and to prevent liquids from ponding or draining away from the floor drains.

~~D.~~ F. Materials recovery facilities.

1. No uncontainerized putrescible waste shall remain at the materials recovery facility at the end of the working day.

2. Facilities engaged in the reclamation of petroleum contaminated soils shall perform the analyses required by 9VAC20-81-660.

3. A written operating plan shall be prepared covering at the minimum:

a. ~~Facility housekeeping, onsite traffic control, schedules for waste delivery vehicle flow, wastewater collection, storm water collection, vector control, odor control, noise control, and methods of enforcement of traffic flow plans for the waste delivery vehicles.~~

b. ~~A description of methods to determine the usefulness of the recovered material, frequency of testing, and the action the facility owner or operator will take whenever the material fails the standards applicable to the recovered product and must be disposed of as waste.~~

c. ~~The process rate of the facility, the capacities of any waste storage areas, the expected daily quantity of waste residue generation, and the ultimate disposal location for all facility generated waste residue.~~

d. ~~For facilities engaged in the reclamation of soil, a description of the methods and frequencies of analysis of the reclaimed product shall be provided as required by 9VAC20-81-660.~~

e. ~~For facilities that store waste tires, the provisions of 9VAC20-81-640 B, C, and D, as applicable.~~

~~4. A written contingency plan shall be prepared for a materials recovery facility covering operating procedures to be employed during periods of nonprocessing. This plan shall set forth procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities. The plan will include emergency loading, unloading, storage, transfer, or other disposal capabilities to be used when the facility downtime exceeds 24 hours.~~

~~5. 3.~~ Leachate and wash water from a materials recovery facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES Permit issued pursuant to 9VAC25-31.

~~4. The floors and ramps in the unloading, receiving, tipping, and storage areas shall be cleaned at least once per week.~~

~~5. Floor drains shall be kept free of debris and allow for free draining of liquids.~~

~~6. The facility shall maintain the integrity of the tipping floors and ramps as designed, including making repairs as necessary to correct cracking, settlement, or other damage, and to prevent liquids from ponding or draining away from the floor drains.~~

E. G. Waste to energy and incineration facilities.

1. Unprocessed incoming waste, facility process waste residues and effluents, and recovered materials, if applicable, shall be stored in bunkers, pits, bins, or similar containment vessels and shall be kept at all times at levels that prevent spillage or overflow. Any waste materials temporarily stored on the facility's tipping floor shall be stored as stated above by the end of the working day, or other time frame approved by the director.

~~2. A written operating plan shall be prepared covering at the minimum facility housekeeping, onsite traffic control, process rate, schedules for waste delivery vehicle flow, wastewater collection, storm water collection, vector control, odor control, noise control, and methods of enforcement of traffic flow plans for the waste delivery vehicles.~~

~~3. 2.~~ The owner or operator shall implement waste receiving area control procedures that provide for the inspection of the incoming waste stream for the purpose of removing unprocessable or potentially explosive materials prior to the initiation of processing. In addition, the inspection shall effectively prevent the acceptance of unauthorized waste types by inspecting a minimum of 1.0% of the incoming loads of waste. If the facility receives waste generated outside of Virginia and the regulatory structure in the originating jurisdiction allows for the disposal of wastes at landfills or the incineration of wastes that are prohibited or restricted by Virginia's laws and regulations prohibit, a minimum of 10% of the incoming loads of waste from those jurisdictions shall be inspected. These procedures and necessary emergency contingency plans shall be incorporated into the facility's operating operations manual.

~~4. A written contingency plan shall be prepared for a waste to energy facility covering operating procedures to be employed during periods of nonoperation. This plan shall set forth procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities.~~

~~5. 3.~~ Leachate and wash water from an a waste to energy or incineration facility shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES Permit issued pursuant to the State Water Control Board regulation (9VAC25-31).

~~6. 4.~~ Arrangements for disposal of facility-generated waste shall be established and maintained throughout the life of the waste to energy or incineration facility.

~~7. 5.~~ Chemical analyses of residues.

a. The owner or operator shall perform a chemical analyses of all residual ash, in accordance with the conditions of the solid waste management facility permit and current solid waste management regulations.

b. Samples and measurements taken for this purpose shall be representative of the process or operation and shall be performed in accordance with the procedures outlined in "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods," EPA publication SW-846. At a minimum the sampling shall include analyses for toxicity and shall be performed at the frequency specified in the facility's permit.

c. The department may require the operator to perform additional analyses on ash removed from exhaust gases and collected by emission control equipment at a frequency established by the department in the facility's permit.

d. A report containing the following information shall be submitted to the department within 90 days of sample collection:

(1) The date and place of sampling and analysis;

- (2) The names of the individuals who performed the sampling and analysis;
- (3) The sampling and analytical methods utilized;
- (4) The results of such sampling and analyses; and
- (5) The signature and certification of the report by an authorized agent for the facility.

6. The floors and ramps in the unloading, receiving, tipping, and storage areas shall be cleaned at least once per week.

7. Floor drains shall be kept free of debris and allow for free draining of liquids.

8. The facility shall maintain the integrity of the tipping floors, ramps, and surfaces of sorting pads, storage areas, bunkers and pits, as designed, including making repairs as necessary to correct cracking, settlement, or other damage, and to prevent liquids from ponding or draining away from the floor drains.

#### F. H. Waste piles.

1. No putrescible solid waste shall remain at the storage or treatment facility at the end of the working day unless it is stored in lined or covered waste storage areas, or interim transportation vehicles (trailers, roll-off containers) designed specifically for storage.

~~2. A written operating plan for the waste management facility shall be prepared covering at the minimum:~~

~~a. Facility housekeeping, onsite traffic control, schedules for waste delivery vehicle flow, wastewater/leachate collection, storm water collection, vector control, odor control, dust suppression, noise control, and methods of enforcement of traffic flow plans for the waste delivery vehicles.~~

~~b. A description of types of wastes that will be managed at the facility, of the storage or treatment activity, of any required testing including test methods and frequencies, and sampling techniques.~~

~~c. A description of the management and disposition of waste materials will be provided that addresses waste materials that are undesirable and will not be received at the facility.~~

~~d. Descriptions of first in, first out waste management procedures to ensure that the oldest waste materials being stored are sent offsite for re-use or disposal prior to newer materials.~~

~~e. A fire prevention and suppression program designed to minimize hazards when storing organic waste streams.~~

~~3. A written contingency plan shall be prepared covering operating procedures to be employed during periods of nonoperation. This plan shall set forth procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities.~~

4. 2. Leachate and ~~run-off~~ runoff that have been in contact with the contents of the waste pile shall not be permitted to drain or discharge into surface waters except when authorized under a VPDES permit issued pursuant to 9VAC25-31.

~~5. 3.~~ Collection and holding facilities associated with run-on and ~~run-off~~ runoff control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

~~6. 4.~~ If the pile contains any particulate matter that may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

~~7. 5.~~ While a waste pile is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

a. Deterioration, malfunctions, or improper operation of run-on and ~~run-off~~ runoff control systems;

b. Proper functioning of wind dispersal control systems, where present; and

c. The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

~~8. 6.~~ Incompatible wastes, or incompatible wastes and materials shall not be placed in the same pile.

~~9. 7.~~ Roads serving the unloading, treatment, and storage areas shall be maintained to be passable in all weather by ordinary vehicles when the facility is operating. All operation areas and units shall be accessible.

#### **9VAC20-81-350. Recordkeeping requirements.**

Recordkeeping for compost facilities, solid waste transfer stations, centralized waste treatment facilities, materials recovery facilities, waste to energy and incineration facilities, waste piles, and miscellaneous

facilities shall be governed by the standards as set forth in this section. Records to be maintained include:

1. The facility owner or operator shall record self-inspections in an inspection log. At a minimum, the facility shall be inspected on at least a monthly basis and include inspection of all applicable major aspects of facility operations necessary to ensure compliance with the requirements of this chapter. These records shall be retained for at least three years from the date of inspection and be available for review. They must include the date and time of the inspection, the name of the inspector, a description of the inspection including the identity of specific equipment and structures inspected, the observations recorded, and the date and nature of any remedial actions implemented or repairs made as a result of the inspection.
2. The facility owner or operator shall record any monitoring information (including all calibration and maintenance records and copies of all reports required by this part or the permit or permit-by-rule). Records for monitoring information shall include the date, exact place, and time of sampling or measurements; the name of the individual who performed the sampling and measurement; the date analyses were performed; the name of the individual who performed the analyses; the analytical techniques or methods used; and the result of such analyses. Additional information relating to the analysis, including records of internal laboratory quality assurance and control, shall be made available to the department at its request.
3. The facility owner or operator shall retain records of all unauthorized solid waste accepted identifying the waste and its final disposition. Such records shall include the date solid waste was received, the type of solid waste received, the date of disposal, and the disposal method and location.
4. The records shall be retained in the operating record for the facility for a period of at least three years from the date of the sample analysis, measurement, report, or application.

#### **9VAC20-81-360. Closure requirements.**

The closure of all compost facilities, solid waste transfer stations, centralized waste treatment facilities, materials recovery facilities, waste to energy and incineration facilities, and waste piles shall be governed by the standards as set forth in this section:

1. The owner or operator shall close his facility in a manner that minimizes the need for further maintenance, and controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, the ~~postclosure~~ post-closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to the groundwater, surface water, or to the atmosphere.
  - a. At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate. For miscellaneous units, all waste, materials contaminated with waste constituents, and treatment residue shall be removed and disposed in a permitted facility.
  - b. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in subdivision 1 a of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he shall close the facility and perform ~~postclosure~~ post-closure care in accordance with the closure and ~~postclosure~~ post-closure care requirements of Part III (9VAC20-81-160 and 9VAC20-81-170, respectively). In addition, for compost facilities, other corrective measures approved by the department may be used to remediate the site.
2. Closure plan and modification of plan.
  - a. The owner or operator of any facility shall have a written closure plan. This plan shall identify the steps necessary to completely close the ~~facility/unit~~ facility or unit at its full operation under the permit conditions. The closure plan shall include, at least a schedule for final closure including, as a minimum, the anticipated date when wastes will no longer be received, the date when completion of final closure is anticipated, and intervening milestone dates that will allow tracking of the progress of closure. The closure plan shall also include closure cost estimates in accordance with 9VAC20-70-111, to include removal costs associated with any stockpiles of material for beneficial use, for the purpose of financial assurance.
  - b. The owner or operator may amend his closure plan at any time during the active life of the facility. The owner or operator shall so amend his plan any time changes in operating plans or facility design affects the closure plan. The amended closure plan shall be placed in the operating record.
  - c. The owner or operator shall submit to the department the amended closure plan that was placed in the operating record.

- d. At least 180 days prior to beginning closure of each unit, the owner or operator shall notify the department of the intent to close.
  - e. The owner or operator shall provide to the department a certification from a professional engineer that the facility has been closed in accordance with the closure plan.
3. Time allowed for closure.
- a. The owner or operator shall complete closure activities in accordance with the closure plan and within six months after receiving the final volume of wastes. The director may approve a longer closure period if the owner or operator can demonstrate that the required or planned closure activities will, of necessity, take longer than six months to complete; and that he has taken all steps to eliminate any significant threat to human health and the environment from the unclosed but inactive facility.
  - b. The owner or operator shall post one sign notifying all persons of the closing, and providing a notice prohibiting further receipt of waste materials. The sign will remain in place until closure activities are complete. Further, suitable barriers shall be installed at former accesses to prevent new waste from being delivered.
4. Inspection. The department shall inspect all facilities at the time of closure to confirm that the closing is complete and adequate. It shall notify the owner of a closed facility, in writing, if the closure is satisfactory, and shall require any necessary construction or such other steps as may be necessary to bring unsatisfactory sites into compliance with this chapter.

### **9VAC20-81-370. Closure requirements for surface impoundments and lagoons.**

#### **A. Closure.** At closure, the owner or operator shall:

- 1. Remove all waste residue, contaminated containment system components (liners, etc.), contaminated subsoils, and decontaminate structures and equipment contaminated with waste, and manage them as solid waste (or hazardous waste, if applicable) unless exempt under Part III (9VAC20-81-100 et seq.) of this chapter; or
- 2. Close the impoundment and provide ~~post-closure~~ post-closure care for a landfill under Part III (9VAC20-81-100 et seq.) of this chapter, including the following:
  - a. Eliminate free liquids by removing liquid waste and waste residue;
  - b. Install a groundwater monitoring system and initiate groundwater monitoring in accordance with the requirements of 9VAC20-81-250;
  - c. Stabilize remaining waste residues to a bearing capacity necessary to support the final cover; and
  - d. Cover the surface impoundment with a final cover designed and constructed in accordance with the requirements of 9VAC20-81-160 ~~D~~ E 2.
- 3. Close inactive, new, and existing CCR surface impoundments in accordance with the requirements of Part VIII (9VAC20-81-800 et seq.) of this chapter or this subsection, whichever is more stringent.

**B. Inspection.** The department shall inspect all solid waste management facilities at the time of closure to confirm that the closing is complete and adequate. It shall notify the owner of a closed facility, in writing, if the closure is satisfactory and shall require any necessary construction or such other steps as may be necessary to bring unsatisfactory sites into compliance with this chapter.

### **9VAC20-81-380. Remediation waste management units.**

#### **A. General.**

- 1. For the purpose of implementing remedies under 9VAC20-81-45 or under the Voluntary Remediation Regulations (9VAC20-160), the director may designate an area of a facility as a remediation waste management unit (RWMU) as defined in Part I (9VAC20-81-10 et seq.) of this chapter. One or more RWMUs may be designated at a facility.
- 2. The director may designate a unit subject to this chapter as an RWMU or incorporate such a unit into a designated RWMU if:
  - a. The unit is closed or has begun the closure process under 9VAC20-81-160 ~~C~~ D; and
  - b. Inclusion of the unit will enhance implementation of effective, protective, and reliable remedial actions for the facility.
- 3. Consolidation or placement of remediation wastes into a designated RWMU does not constitute creation of a unit subject to the siting, design, and operation requirements of Part III (9VAC20-81-120, 9VAC20-81-130, and 9VAC20-81-140) and the permitting requirements of Part V (9VAC20-81-400 et seq.) of this chapter.
- 4. The applicable requirements for groundwater monitoring and closure under 9VAC20-81-250 and

9VAC20-81-160 will continue to apply to the RWMU.

B. Criteria for designating RWMUs. The director will designate an RWMU if he finds that:

1. The RWMU shall facilitate the implementation of reliable, protective and cost-effective remedies;
2. Waste management activities associated with the RWMU shall not create unacceptable risks to humans or to the environment resulting from exposure to solid wastes and solid waste constituents;
3. If an inclusion of uncontaminated areas of the facility into an RWMU is requested, such an inclusion will be more protective than management of such wastes at contaminated areas of the facility;
4. Areas within the RWMU where wastes remain in place after closure of the RWMU shall be managed and contained so as to minimize future releases, to the extent practicable;
5. The RWMU shall expedite the timing of the remedial activity implementation when appropriate and practicable;
6. The RWMU shall enable the use, when appropriate, of treatment technologies (including innovative treatment technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the RWMU; and
7. The RWMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the RWMU.

C. Requirements. The director will specify the requirements for RWMUs to include, ~~but not be limited to,~~ the following:

1. The areal configuration of the RWMU;
2. Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements;
3. Requirements for groundwater monitoring that:
  - a. Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of solid waste constituents in groundwater from sources located within the RWMU; and
  - b. Detect and subsequently characterize releases of solid waste constituents to groundwater that may occur from areas of the RWMU in which wastes will remain in place after closure of the RWMU.
4. Closure and ~~post-closure~~ post-closure care requirements:
  - a. Closure of RWMUs shall:
    - (1) Minimize the need for further maintenance; and
    - (2) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, ~~post-closure~~ post-closure escape of solid waste, solid waste constituents, leachate, contaminated ~~run-off~~ runoff, or waste decomposition products to the ground, surface waters, or the atmosphere.
  - b. Requirements for closure of an RWMU shall include the following, as appropriate and deemed necessary by the director for a given RWMU:
    - (1) Requirements for excavation, removal, treatment, or containment of wastes;
    - (2) For areas in which wastes will remain in place after closure of the RWMU, requirements for capping of such areas; and
    - (3) Requirements for decontamination of equipment, devices, and structures in remediation waste management activities within the RWMU.
  - c. In establishing specific closure requirements for RWMUs, the director will consider the following factors:
    - (1) RWMU characteristics;
    - (2) Volume of waste that remains in place after closure;
    - (3) Potential for releases from the RWMU;
    - (4) Physical and chemical characteristics of the waste;
    - (5) Hydrological and other relevant environmental conditions at the facility that may influence the migration of any potential or actual releases; and
    - (6) Potential for exposure of humans and environmental receptors if releases were to occur from the RWMU.

d. ~~Postclosure~~ Post-closure requirements as necessary to protect human health and the environment to include, for areas where wastes will remain in place, monitoring and maintenance activities and the frequency with which such activities shall be performed in order to ensure the integrity of any final cap, final cover, or other containment system.

5. The director will document the rationale for designating RWMUs.

6. The designation of an RWMU does not change the department's existing authority to address ~~clean-up~~ cleanup levels, media specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

#### D. Temporary units.

1. Temporary tanks and container storage areas may be used for treatment or storage of remediation wastes during remedial activities, if the director determines that design, operating, or closure standards applicable to RWMUs may be replaced by alternative requirements that are protective of human health and the environment.

2. Any temporary unit to which alternative requirements are applied shall be:

- a. Located within the facility boundary; and
- b. Used only for the treatment or storage of remediation wastes.

3. In establishing standards to be applied to temporary units, the director will consider the following factors:

- a. Length of time such unit will be in operation;
- b. Type of unit;
- c. Volumes of waste to be managed;
- d. Physical and chemical characteristics of the waste to be managed in the unit;
- e. Potential for releases from the unit;
- f. Hydrogeological and other relevant environmental conditions at the facility that may influence migration of any potential releases; and
- g. Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

4. The director will specify the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The director will also specify the design, operating, and closure requirements for the unit.

5. The director may extend the operational period of a temporary unit once for a period of one year beyond that originally specified, if the director determines that:

- a. Continued operation of the unit will not pose a threat to human health and the environment; and
- b. Continued operation of the unit is necessary to ensure timely and efficient implementation of the remedial actions at the facility.

#### **9VAC20-81-385. Landfill mining.**

A. Because of the varied and experimental nature of the landfill mining processes currently employed, 9VAC20-81-395 offers management standards. For this reason, portions of that section shall be made applicable to the mining process. As used in this section "landfill mining" does not include excavation of waste to facilitate installation of landfill gas, leachate management, or other utility systems provided waste excavated is managed and cover installed in accordance with 9VAC20-81-140 or 9VAC20-81-160, as applicable.

B. In addition to fulfilling applicable requirements of 9VAC20-81-395, the owner or operator of a landfill mining facility shall prepare ~~an operational~~ a landfill mining plan that will describe in detail the procedures that will be employed in opening the closed landfill areas, the phased description of opened areas, the procedures that will be employed in excavation of opened areas, the management of excavated materials, and disposition of recovered materials and unusable residues. The ~~operational~~ landfill mining plan shall also contain an estimate of the duration of the mining process and the final use of the recovered air space.

C. In cases where residues will be disposed on site, the disposal units shall be regulated under Part III (9VAC20-81-100 et seq.) of this chapter.

#### **9VAC20-81-395. Miscellaneous facilities.**

A. The requirements in this section apply to owners and operators of facilities that treat or store solid waste in facilities or units not otherwise regulated under Part III (9VAC20-81-100 et seq.) of this chapter or 9VAC20-81-310 through 9VAC20-81-385.

B. A miscellaneous unit shall be located, designed, constructed, operated, maintained, and closed in a

manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, ~~but not limited to~~, siting, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of solid waste or constituents of solid wastes from the unit. Permit terms and provisions shall include those requirements of Part III (9VAC20-81-100 et seq.), 9VAC20-81-310 through 9VAC20-81-385, and Part V (9VAC20-81-400 et seq.), that are appropriate for the miscellaneous unit being permitted.

C. Protection of human health and the environment includes, ~~but is not limited to~~:

1. Proper location of the facility and the unit considering:
  - a. The hydrologic and geologic characteristics of the unit and the surrounding area, including the topography of the land around the facility and the unit;
  - b. The atmospheric and meteorological characteristics of the unit and the surrounding area;
  - c. The patterns of precipitation in the region;
  - d. The patterns of land use in the surrounding area;
  - e. The potential for health risks caused by human exposure to waste constituents; and
  - f. The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.
2. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment, considering:
  - a. The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;
  - b. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater;
  - c. The quantity and direction of groundwater flow;
  - d. The proximity to and withdrawal rates of current and potential groundwater uses; and
  - e. The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation.
3. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface considering:
  - a. The volume and physical and chemical characteristics of the waste in the unit;
  - b. The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;
  - c. The quantity, quality, and direction of groundwater flow;
  - d. The proximity of the unit to surface waters;
  - e. The current and potential uses of nearby surface waters and any water quality standards established for those surface waters; and
  - f. The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils.
4. Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:
  - a. The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;
  - b. The effectiveness and reliability of systems and structures to reduce or prevent emissions of waste constituents to the air;
  - c. The operating characteristics of the unit; and
  - d. The existing quality of the air, including other sources of contamination and their cumulative impact on the air.

D. Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies, when called for by the performance standards in subsection C of this section, shall ensure compliance with any applicable requirements of Parts V (9VAC20-81-400 et seq.), VI (9VAC20-81-610), or VIII (9VAC20-81-700) of this chapter, as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

E. Closure shall be in accordance with 9VAC20-81-160 ~~D~~ E.

F. ~~Postclosure~~ Post-closure care. If a treatment or storage unit has contaminated soils or groundwater that cannot be completely removed or decontaminated during closure, it shall close as a disposal unit in

accordance with the requirements of 9VAC20-81-160 and 9VAC20-81-170.

**9VAC20-81-397. Exempt yard waste composting facilities.**

A. Applicability.

1. The standards in subsection B of this section apply to persons who compost vegetative waste in a manner described in the conditional exemption set forth at 9VAC20-81-95 D.
2. The standards in subsection C of this section apply to persons who operate small vegetative waste disposal units on their property.

B. Composting of yard waste. Additional requirements for managing conditionally exempt yard waste compost facilities, described under 9VAC20-81-95 D 6, are as follows:

1. Owners or operators of agricultural operational activities that accept only yard waste generated offsite are exempt from all other provisions of this chapter as applied to the composting activities provided that:

- a. The total time for composting process and storage of material that is being composted shall not exceed 18 months prior to its field application or sale as a horticultural or agricultural product;
- b. No waste material other than yard waste is received;
- c. The total amount of yard waste received from offsite never exceeds 6,000 cubic yards in any consecutive 12-month period;
- d. All applicable standards of local ordinances that govern or concern yard waste handling, composting, storage, or disposal are satisfied;
- e. They pose no nuisance or present or potential threat to human health or the environment; and
- f. Before receiving any waste, the owner submits a complete DEQ Form YW-3:

2. Owners or operators of agricultural operations that accept only Category I ~~yard waste~~ feedstocks and manures from herbivorous animals generated offsite are exempt from all other provisions of this chapter as applied to the composting activities provided that:

- a. The composting area is located not less 300 feet from a property boundary of a parcel owned or controlled by another person, is located not less than 1,000 feet from an occupied dwelling not located on the same property as the composting area, and is not located within an area designated as a flood plain;
- b. The agricultural operation has at least one acre of ground suitable to receive yard waste for each 150 cubic yards of finished compost;
- c. The total time for the composting process and storage of material that is being composted or has been composted shall not exceed 18 months prior to the field application or sale as horticultural or agricultural product;
- d. The owner or operator of any agricultural operation that receives in any 12-month period (consecutive) more than 6,000 cubic yards of waste generated from property not within the control of the owner or the operator shall submit by April 1 each year to the director an annual report in accordance with subdivision 4 of this subsection describing the volume and types of yard waste received for composting by the operation between January 1 and December 31 of the preceding consecutive 12 months and shall certify that the yard waste composting facility complies with local ordinances;
- e. No waste material other than [ ~~yard waste~~ ] [ Category 1 feedstocks ] and manures from herbivorous animals are received;
- f. The quantities of offsite manures from herbivorous animals brought onsite are limited to achieve a carbon to nitrogen ratio of 25:1 to 40:1. All manures must be incorporated into the compost within 24 hours of delivery. No offsite manures may be stored onsite; and
- g. Prior to the receipt of solid waste generated offsite, the owner or operator of the agricultural operation intending to operate under this exemption shall submit a complete DEQ Form YW-4.

3. Owners or other persons authorized by the owner of real property who receive only yard waste generated offsite for the purpose of producing compost on said property shall be exempt from all requirements of this chapter as applied to the composting activity provided that:

- a. Not more than 500 cubic yards of yard waste generated offsite is received at the owner's said property in any consecutive 12-month period;
- b. No compensation will be received, either directly or indirectly, by the owner or other persons authorized by the owner of said property from parties providing yard waste generated off said property;
- c. All applicable standards of local ordinances that govern or concern yard waste handling,

composting, storage, or disposal are satisfied; and

d. They pose no nuisance or present or potential threat to human health or the environment.

4. Owners or operators of an agricultural composting operation in accordance with subdivision 2 of this subsection, who are exempt from the permitting requirements in accordance with 9VAC20-81-95 D and who may receive more than 6,000 cubic yards of yard waste generated from property not within the control of the owner or operator in any 12-month period shall submit an annual report on DEQ Form YW-2. The report shall describe the volume and types of yard waste received for composting. Completion and filing of the form by April 1 for activities in the preceding 12 months (January 1 through December 31) constitutes compliance with the requirements. The annual report shall be submitted on DEQ Form YW-2.

C. Small disposal units for vegetative wastes from ~~land-clearing~~ land-clearing. Additional requirements for managing small disposal units for vegetative waste from ~~land-clearing~~ land-clearing as exempted under 9VAC20-81-95 D 17 are as follows:

Owners of real property who operate small waste disposal units that qualify under all the conditions of this subsection shall be exempt from other provisions, including permitting, of this chapter as applied to those units provided:

1. No person other than the owner of the real property shall be exempt under this section.

2. All owners of the real property who hold title to property at the time the disposal unit is initially opened or during the time the unit remains open (limited to two calendar years below) shall, in the exercise of this exemption, accept responsibility for maintaining compliance of the unit with all requirements of this chapter as set out in this exemption.

3. The owner agrees that he shall not sell, give, or otherwise transfer the responsibility for the unit's compliance to any other party throughout its active life, the ~~post-closure~~ post-closure care period, and the corrective action period, and that he shall remain the principal party responsible for the compliance of the unit with this chapter.

4. Only units that are in compliance with all requirements of this section shall qualify, and units that are not in compliance with all requirements of this section shall not qualify or shall cease to qualify. Units that qualify for this exemption shall comply with the following requirements:

a. Only vegetative waste or yard waste shall be placed in the disposal unit; however, grass trimmings or bulk leaves shall not be placed in the disposal unit.

b. The waste disposal unit shall not be larger than 0.50 acres in size.

c. The waste disposal unit shall not be located within 1,000 feet of any other waste disposal unit of any type, including other disposal units exempted by this chapter.

d. The waste disposal unit shall not be located within 150 feet of any existing building or planned building. The waste disposal unit shall not be located within 50 feet of any existing or planned subdivision lot that may be used for the erection of a building.

e. The waste disposal unit shall not be located within 100 feet of a flowing stream; body of water; any well, spring, sinkhole, or unstable geologic feature. Also, it shall not be located within 200 feet of any groundwater source of drinking water.

f. The waste disposal unit shall be constructed to separate all waste by at least two feet vertically from the seasonal high water table.

g. The waste disposal unit should not obstruct the scenic view from any public road and should be graded to present a good appearance.

h. Mounding of the waste disposal unit shall not reach an elevation more than 20 feet above the original elevation of the terrain before the disposal began. The elevation of the original terrain should be based on the general area and not the bottom of ravines and small depressions in the disposal area.

i. The waste received by the waste disposal unit shall be limited to the following:

(1) Waste generated onsite;

(2) Waste generated by clearing the path of a roadway or appurtenances to the roadway when buried within the right-of-way of the roadway (waste shall not be buried in the structural roadway prism) or adjacent land under a permanent easement and the terms of the easement incorporate the construction of the disposal unit; and

(3) Waste from property that is owned by the owner of the disposal unit, within the same construction project, and generated not more than two miles from the unit.

j. The waste disposal unit shall be closed two calendar years from the date it first receives waste. The closure shall include cover with two feet of compacted soil, grading for good appearance with slopes that prevent erosion, and seeding or revegetation. During the life of the

unit, earthen material should be applied periodically to prevent excessive subsidence of the waste disposal unit when closed. Sides of the finished unit shall be sloped to prevent erosion, and slopes shall not be steeper than one vertical foot to three horizontal feet.

k. The location plat and legal description, as set out in subdivision 4 p of this subsection, of all units that are not located wholly within the bed or right-of-way of a public road shall be recorded in the deed book for the property in the court of record prior to the first receipt of waste. Waste disposal shall not be allowed within the structural roadway prism.

l. The owner shall maintain continuous control of access to all disposal units from the time they are opened until they are closed in accordance with this section. The owner shall prevent fires and provide standby equipment and supplies sufficient to easily suppress a fire. Brush and small limbs that might provide tinder for a fire shall be covered at the end of the work day with one foot of soil.

m. The owner shall not be exempt from the CDD landfill groundwater monitoring and corrective action requirements of 9VAC20-81-250 and 9VAC20-81-260, respectively, to include required monitoring during the ~~post-closure~~ post-closure period.

n. The owner shall not be exempt from the decomposition gas monitoring and venting requirements of 9VAC20-81-210. The owner of a small waste disposal unit shall comply in all respects with the decomposition gas monitoring and venting requirements as established in this chapter.

o. The owner shall not be exempt from any requirement of the Financial Assurance Regulations For Solid Waste Disposal Facilities, (9VAC20-70), and shall comply with all financial assurance requirements.

p. At least six weeks before beginning construction of a vegetative waste disposal unit, the owner of the real property shall notify in writing the director, the governing board of the city, county, or town wherein the property lies, and all property owners whose parcel will abut the area of the proposed disposal unit. The notice shall give the names and legal addresses of the owners, the type of unit to be developed, and the projected date of initial construction of the unit. The owner shall include a plat and legal description of the disposal unit's metes and bounds prepared and stamped by a Virginia licensed land surveyor. The plat and description shall follow all standard practice such as inclusion of the nearest existing intersection of state roads and existing fixed survey markers in the vicinity.

q. Unless otherwise designated, all monitoring and reporting requirements shall begin at the initiation of the disposal operations and all reports shall be sent to the department and the chief executive of the local government.

#### **9VAC20-81-410. Permits-by-rule and other special permits.**

##### **A. Permits by rule.**

1. As an alternate to obtaining a full permit, an owner or operator of any of the following facilities may elect to operate under this section:

- a. Compost facility;
- b. Solid waste transfer station;
- c. Materials recovery facility;
- d. Waste to energy, thermal treatment, or incineration facility;
- e. Waste pile; or
- f. Centralized waste treatment facility.

2. Submission. The owner or operator of a facility described in subdivision 1 of this section shall be deemed to have a solid waste management facility permit notwithstanding any other provisions of Part V (9VAC20-81-400 et seq.) of this chapter, except 9VAC20-81-450 B 2 and 3, if the owner or operator provides to the department the completed DEQ Form SW PBR (Solid Waste Management Facility Permit-by-Rule Application Form) and all required information and attachments described in this subdivision, and the department acknowledges completeness of the submittal per subdivision 4 of this subsection:

- a. A notice of intent to operate such a facility with documentation required under 9VAC20-81-450 B;
- b. A certification that the facility meets the siting standards, as applicable, of 9VAC20-81-320;
- c. A certification that the facility meets the statutory requirements for consistency with solid waste management plans as recorded in § 10.1-1408.1 of the Code of Virginia;
- d. A certification that the standards, as applicable, of 9VAC20-81-340 are met in an operations manual to be maintained in the operating record in accordance with 9VAC20-81-485;

e. A certificate signed by a professional engineer that:

- (1) The facility has been designed and constructed in accordance with the standards, as applicable, of 9VAC20-81-330; and
- (2) The standards, as applicable, of 9VAC20-81-360 are met in a closure plan to be maintained in the operating record;

f. Demonstration of legal control over the site for the permit life;

g. A certification from the State Corporation Commission that the business entity pursuing the permit-by-rule status is a valid entity, authorized to transact its business in Virginia. This requirement does not apply to those facilities owned solely by governmental units;

h. Closure cost estimates and proof of financial responsibility as required by the Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70); proof of financial responsibility must be for the entity identified in subdivision 2 g of this subsection;

i. The results of the public participation effort conducted in accordance with the requirements contained in subdivision 3 of this subsection;

j. The following additional information for the specific facilities as noted:

- (1) For compost facilities only, a description of the type of facility and the classification of materials that will be composted as classified under 9VAC20-81-310 A 3;

- (2) For waste piles only, proof that the facility has a valid VPDES permit, if applicable; and

- (3) For waste to energy, thermal treatment, or incineration facilities or materials recovery facilities engaged in reclamation of petroleum-contaminated materials only:

- (a) Proof that the facility has a permit issued in accordance with the regulations promulgated by the State Air Pollution Control Board; and

- (b) In the case of thermal treatment facilities or materials recovery facilities engaged in reclamation of petroleum-contaminated materials, a description of how the requirements of 9VAC20-81-660 will be met; and

k. The applicable permit fees under the provisions of 9VAC20-90.

### 3. Public participation.

a. Before the initiation of any construction at the facility under subdivision 1 of this subsection, the owner or operator shall publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation of the intent to construct and operate a facility eligible for a permit-by-rule. The notice shall include:

- (1) A brief description of the proposed facility and its location;

- (2) A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the facility and how the standards and the requirements of this chapter will be met, to identify issues of concern, to facilitate communication and to establish a dialogue between the permittee and persons who may be affected by the facility;

- (3) Announcement of a 30-day comment period, in accordance with subdivision 3 d of this subsection, and the name, telephone number, and address of the owner's or operator's representative who can be contacted by the interested persons to answer questions or where comments shall be sent;

- (4) Announcement of the date, time, and place for a public meeting held in accordance with subdivision 3 c of this subsection; and

- (5) Location where copies of the documentation to be submitted to the department in support of the permit-by-rule notification can be viewed and copied.

b. The owner or operator shall place a copy of the documentation and support documents in a location accessible to the public in the vicinity of the proposed facility.

c. The owner or operator shall hold a public meeting not earlier than 14 days after the first publication of the notice required in subdivision 3 a of this subsection and no later than seven days before the close of the 30-day comment period. The meeting shall be held to the extent practicable in the vicinity of the proposed facility at a time convenient for the public.

d. The public shall be provided 30 days to comment on the technical and the regulatory aspects of the proposal. The comment period will begin on the date the owner or operator publishes the first notice in the local newspaper.

e. The requirements of this section do not apply to the owners or operators of a material recovery facility, waste to energy facility, incinerator, or a thermal treatment unit that has received a permit from the department based on the regulations promulgated by the State Air

Pollution Control Board or State Water Control Board that required facility-specific public participation procedures.

4. Completeness review. Upon receiving the certifications and other required documents, including the results of the public meeting and the applicant's response to the comments received, the department shall conduct a completeness review and respond within 30 calendar days. If the applicant's submission is administratively complete, the applicant shall be deemed to operate under permit-by-rule status. If the applicant's submission is administratively incomplete, the applicant shall be deemed to not have a permit-by-rule. The department may require the operator to submit the full permit application and to obtain a regular solid waste management facility permit if it is determined the requested operation does not qualify for permit-by-rule status.

5. Change of ownership. A permit by rule may not be transferred by the permittee to a new owner or operator. However, when the property transfer takes place without proper closure, the new owner shall notify the department of the sale and fulfill all the requirements contained in subdivision 2 of this subsection. Upon presentation of the financial assurance proof required by 9VAC20-70 by the new owner, the department will release the former owner from his closure and financial responsibilities and acknowledge existence of the new permit by rule in the name of the new owner.

6. Facility modifications. The owner or operator of a facility operating under a permit by rule may modify its design and operation by furnishing the department a new certificate and applicable permit fees under the provisions of 9VAC20-90. For modifications of design, the new certificate shall be prepared by a professional engineer and shall include new documentation required under subdivision 2, as applicable, and subdivision 3 of this subsection. For modifications to the operations, the owner or operator shall submit to the department a new certificate and documentation required under subdivision 2 of this subsection, as applicable. Whenever modifications in the design or operation of the facility affect the provisions of the closure plan, the owner or operator shall revise the closure plan and submit to the department a new certificate and documentation required under subdivision 2 of this subsection, as applicable. Should there be an increase in the closure costs, the owner or operator shall submit a new proof of financial responsibility as required by the Financial Assurance Regulations for Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70).

7. Loss of permit by rule status. In the event that a facility operating under a permit by rule violates any applicable siting, design and construction, or closure provisions of 9VAC20-81-320, 9VAC20-81-330, or 9VAC20-81-360, respectively, the owner or operator of the facility will be considered to be operating an unpermitted facility as provided for in 9VAC20-81-45 and shall be required to either obtain a new permit as required by Part V (9VAC20-81-400 et seq.) or close under Part III (9VAC20-81-100 et seq.) or IV (9VAC20-81-300 et seq.) of this chapter, as applicable.

8. Termination. The director shall terminate a permit by rule and shall require closure of the facility whenever he finds that:

- a. As a result of changes in key personnel, the requirements necessary for a permit by rule are no longer satisfied;
- b. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in his disclosure statement, or any other report or certification required under this chapter, or has knowingly or willfully failed to notify the director of any material change to the information in the disclosure statement;
- c. Any key personnel have been convicted of any of the crimes listed in § 10.1-1409 of the Code of Virginia, punishable as felonies under the laws of the Commonwealth, or the equivalent of them under the laws of any other jurisdiction; or has been adjudged by an administrative agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth, or any other state and the director determines that such conviction or adjudication is sufficiently probative of the permittee's inability or unwillingness to operate the facility in a lawful manner; or
- d. The operation of the facility is inconsistent with the facility's operations manual ~~and/or~~ or the operational requirements of the regulations.

B. Emergency permits. Notwithstanding any other provision of this chapter, in the event the director finds an imminent and substantial endangerment to human health or the environment, the director may issue a temporary emergency permit to a facility to allow treatment, storage, or disposal of solid waste for a nonpermitted facility or solid waste not covered by the permit for a facility with an effective permit. Such permits:

1. May be oral or written. If oral, it shall be followed within five days by a written emergency permit;
2. Shall not exceed 90 days in duration;
3. Shall clearly specify the solid wastes to be received, and the manner and location of their

treatment, storage, or disposal;

4. Shall be accompanied by a public notice including:

- a. Name and address of the office granting the emergency authorization;
- b. Name and location of the facility so permitted;
- c. A brief description of the wastes involved;
- d. A brief description of the action authorized and reasons for authorizing it; and
- e. Duration of the emergency permit; and

5. Shall incorporate, to the extent possible and not inconsistent with the emergency situation, all applicable requirements of this chapter, and shall include the applicable permit fees under the provisions of 9VAC20-90.

Any permit issued under this subsection may be renewed not more than two times, if necessary. Each such renewal shall be for a period of not more than 90 days.

~~In the event that the Governor declares a state of emergency, open burning of debris waste from the clean-up operations is conditionally exempt from this chapter provided that no open dump, hazard, or public nuisance is created.~~

C. Experimental facility permits.

1. The director may issue an experimental facility permit for any solid waste treatment facility that proposes to utilize an innovative and experimental solid waste treatment technology or process for which permit standards for such experimental activity have not been promulgated under Part IV (9VAC20-81-300 et seq.) of this chapter. Any such permit shall include such terms and conditions as will assure protection of human health and the environment. Such permits shall:

- a. Provide for the construction of such facilities based on the standards shown in 9VAC20-81-395, as necessary;
- b. Provide for operation of the facility for no longer than one calendar year unless renewed as provided in subdivision 3 of this subsection;
- c. Provide for the receipt and treatment by the facility of only those types and quantities of solid waste that the director deems necessary for purposes of determining the efficiency and performance capabilities of the technology or process and the effects of such technology or process on human health and the environment; and
- d. Shall include such requirements as the director deems necessary to protect human health and the environment (including, ~~but not limited to,~~ requirements regarding monitoring, operation, closure, and remedial action), and such requirements as the director deems necessary regarding testing and providing of information to the director with respect to the operation of the facility.

2. For the purpose of expediting review and issuance of permits under this subsection, the director may, consistent with the protection of human health and the environment, modify or waive permit application and permit issuance requirements in Part V (9VAC20-81-400 et seq.) of this chapter, except that there may be no modification or waiver of regulations regarding local certification, disclosure statement requirements, financial responsibility (including insurance), or procedures regarding public participation.

3. The applicant for an experimental permit shall include the applicable permit fees under the provisions of 9VAC20-90. Any experimental permit issued under this subsection may be renewed not more than three times. Each such renewal shall be for a period of not more than one calendar year.

#### **9VAC20-81-450. Permit application procedures.**

A. Any person who proposes to establish a new solid waste management facility (SWMF) or modify an existing SWMF shall submit a permit application to the department, using the procedures set forth in this section and other pertinent sections of this part.

B. Notice of intent.

1. To initiate the permit application process, any person who proposes to establish a new solid waste management facility (SWMF) or modify an existing SWMF or to modify an existing permit shall file a notice of intent with the director stating the desired permit or permit modification, the precise location of the proposed facility, and the intended use of the facility. The notice shall be in letter form and be accompanied by an area map and a site location map.

2. No application for a new solid waste management facility permit or application for a modification for a noncaptive industrial landfill to expand or increase capacity shall be deemed complete unless it is accompanied by DEQ Form DISC-01 and 02 (Disclosure Statement) for all key personnel.

3. No application for a new solid waste management facility permit or application for a modification for a noncaptive industrial landfill to expand or increase capacity shall be considered complete unless the notice of intent is accompanied by a certification from the governing body of the county, city, or town in which the facility is to be located stating that the location and operation of the facility are consistent with all applicable local ordinances, as well as with the local or regional solid waste management plan (SWMP) approved by the department or has initiated the process of amending the SWMP to include the new or expanded facility or an increase in capacity. No certification shall be required for the application for a modification of an existing permit (not including increase in capacity or expansion) other than for a noncaptive industrial landfill in this subdivision. DEQ Form SW-11-1 (Request for Local Government Certification) is provided for the use of the regulated community. Permit and permit-by-rule applicants shall comply with the statutory requirements for consistency with solid waste management plans as recorded in § 10.1-1408.1 of the Code of Virginia.

4. If the applicant proposes to operate a new sanitary landfill or transfer station, the notice of intent shall include a statement describing the steps taken by the applicant to seek the comments of the residents of the area where the sanitary landfill or transfer station is proposed to be located regarding the siting and operation of the proposed sanitary landfill or transfer station. The public comment steps shall be taken prior to filing with the department the notice of intent.

a. The public comment steps shall include publication of a public notice once a week for two consecutive weeks in a newspaper of general circulation serving the locality where the sanitary landfill or transfer station is proposed to be located and holding at least one public meeting within the locality at a time convenient to the public to identify issues of concern, to facilitate communication, and to establish a dialogue between the applicant and persons who may be affected by the issuance of a permit for the sanitary landfill or transfer station.

b. At a minimum, the public notice shall include:

(1) A statement of the applicant's intent to apply for a permit to operate the proposed sanitary landfill or transfer station;

(2) The proposed sanitary landfill or transfer station site location;

(3) The date, time, and location of the public meeting the applicant will hold; and

(4) The name, address, and telephone number of a person employed by an applicant who can be contacted by interested persons to answer questions or receive comments on siting and operation of the proposed sanitary landfill or transfer station.

c. The first publication of the public notice shall be at least 14 days prior to the public meeting date.

d. In addition, the applicant shall adhere to the applicable requirements of § 10.1-1408.1 B of the Code of Virginia.

5. Disposal capacity guarantee. If the applicant proposes to construct a new sanitary landfill or expand an existing sanitary landfill, a signed statement must be submitted by the applicant guaranteeing that sufficient disposal capacity will be available in the facility to enable localities within the Commonwealth to comply with their solid waste management plans developed pursuant to 9VAC20-130 and certifying that such localities will be allowed to contract for and reserve disposal capacity in the facility. This provision does not apply to permit applications from one or more political subdivisions for new or expanded landfills that will only accept municipal solid waste generated within those jurisdictions or from other jurisdictions under an interjurisdictional agreement.

6. Host agreement. If a host agreement is required, as noted in § 10.1-1408.1 B 7 of the Code of Virginia, it shall contain all the requirements specified in that section of the law: and the notice of intent shall be accompanied by a completed DEQ Form SW-11-2 (Host Agreement Certification Request) certifying that the host agreement contains all required information.

7. If the application is for a locality owned and operated sanitary landfill, or the expansion of such a landfill, the applicant shall provide information on:

a. The daily travel routes and traffic volumes that correlate with the daily disposal limit;

b. The daily disposal limit; and

c. The service area of the facility.

8. If the application is for a new solid waste management facility or a modification allowing a facility expansion or an increase in capacity, the director shall evaluate whether there is a need for the additional capacity in accordance with § 10.1-1408.1 D 1 of the Code of Virginia. The information in either subdivision 8 a or b of this subsection must be provided with the notice of intent to assist the director with the required investigation and analysis. Based on the information submitted, the owner or operator will demonstrate how the additional capacity will be utilized over the life of the facility.

a. For any solid waste management facility including a sanitary landfill, information demonstrating that there is a need for the additional capacity. Such information shall include the following. If a certain item is not applicable for a facility, it may be indicated so with reasonable justifications.

- (1) The anticipated area to be served by the facility;
- (2) Similar or related solid waste management facilities that are in the same service area and could impact the proposed facility, and the capacity and service life of those facilities;
- (3) The present quantity of waste generated within the proposed service area;
- (4) The waste disposal needs specified in the local solid waste plan;
- (5) The projected future waste generation rates for the anticipated area to be served during the proposed life of the facility;
- (6) The recycling, composting, or other waste management activities within the proposed service area;
- (7) The additional solid waste disposal capacity and anticipated site life that the facility would provide to the proposed area of service;
- (8) Information demonstrating that the capacity is needed to enable localities to comply with solid waste plans developed pursuant to § 10.1-1411 of the Code of Virginia; and
- (9) Any additional factors that provide justification for the additional capacity provided by the facility.

b. As an alternative, for sanitary landfills, based on current or projected disposal rates, information demonstrating there is less than 10 years of capacity remaining in the facility and information demonstrating either of the following:

- (1) The available permitted disposal capacity for the state is less than 20 years based on the most current reports submitted pursuant to the Waste Information and Assessment Program in 9VAC20-81-80; or
- (2) The available permitted disposal capacity is less than 20 years in either:
  - (a) The planning region, or regions, immediately contiguous to the planning region of the host community; or
  - (b) The facilities within a 75-mile radius of the proposed facility.

9. If the location and operation of the facility is stated by the local governing body to be consistent with all its ordinances, without qualifications, conditions, or reservations, and the notice intent is complete, the applicant will be notified that he may submit his application for a SWMF permit. This application shall be submitted in two parts, identified as Part A and Part B.

10. The applicant shall submit certification from the State Corporation Commission that the business entity pursuing the solid waste management permit is a valid entity, authorized to transact its business in Virginia. This requirement does not apply to those facilities owned solely by governmental units.

11. If the application is for an existing CCR landfill or existing CCR surface impoundment, a complete permit application must be submitted no later than October 17, 2017, to continue operation.

C. Part A application. Part A application provides the information essential for assessment of the site suitability for the proposed facility. It contains information on the proposed facility to be able to determine site suitability for intended uses. It provides information on all siting criteria applicable to the proposed facility.

1. The applicant shall complete, sign, and submit ~~three copies~~ one paper copy and one electronic copy of the Part A application containing required information and attachments as specified in 9VAC20-81-460 to the department and shall submit to the department the applicable permit fee under the provisions of 9VAC20-90. The application shall include the following certification signed by the applicant "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

2. The Part A application will be reviewed for completeness. The applicant will be notified within 30 days whether the application is administratively complete or incomplete. If complete information is not provided within 60 days after the applicant is notified, or an alternate timeframe approved by the

department, the application will be returned to the applicant without further review. Subsequent resubmittals of the application, submitted after 18 months from the date of the department's response letter, shall be considered as a new application, unless an alternate timeline has been approved by the department.

3. Upon receipt of a complete Part A application, the department shall conduct a technical review of the submittal. Additional information may be required or the site may be visited before the review is completed. The director shall notify the applicant in writing of approval or disapproval of the Part A application or provide conditions to be made a part of the approval.

4. For sanitary landfills, the director's notification must indicate that the site on which the landfill will be located is suitable for the construction and operation of a landfill. In making this determination, the director will consider the information presented in the site hydrogeologic and geotechnical report (9VAC20-81-460 ~~FG~~), the landfill impact statement (9VAC20-81-460 ~~H I~~ 1) and the adequacy of transportation facilities (9VAC20-81-460 ~~GH~~). The director may also consider other factors at his discretion.

5. In case of the approval or conditional approval, the applicant may submit the Part B application provided the required conditions are addressed in the submission.

D. Part B application. The Part B application involves the submission of the detailed engineering design and operating plans for the proposed facility.

1. The applicant, after receiving Part A approval, may submit to the department a Part B application to include the required documentation for the specific solid waste management facility as provided for in 9VAC20-81-470 or 9VAC20-81-480. The Part B application and supporting documentation shall be submitted ~~in three copies as one paper copy and one electronic copy~~ and must include the applicable permit fee under the provisions of 9VAC20-90 and the financial assurance documentation as required by 9VAC20-70. The application shall include the following certification signed by the applicant "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

2. The Part B application shall be reviewed for administrative completeness before technical evaluation is initiated. The applicant shall be advised in writing within 30 days whether the application is complete or what additional documentation is required. Subsequent resubmittals of the application, submitted after 18 months from the date of the department's response letter, shall be considered a new application, unless an alternate timeline has been approved by the department. The Part B application will not be evaluated until an administratively complete application is received.

3. The administratively complete application will be coordinated with other state agencies according to the nature of the facility. The comments received shall be considered in the permit review by the department. The application will be evaluated for technical adequacy and regulatory compliance. In the course of this evaluation, the department may require the applicant to provide additional information. At the end of the evaluation, the department will notify the applicant that the application is technically adequate and in regulatory compliance, or that the department intends to deny the application.

4. The procedures addressing the denial are contained in 9VAC20-81-550.

E. Permit issuance.

1. If the application is found to be technically adequate and in full compliance with this chapter, a draft permit shall be developed by the department.

2. Copies of the draft permit will be available for viewing at the applicant's place of business or at the regional office of the department, or both, upon request. A notice announcing the beginning of the public comment period and the availability of the draft permit shall be made in a newspaper with general circulation in the area of the facility. A copy of the notice of availability will be provided to the chief administrative officer of all cities and counties that are contiguous to the host community.

3. If the application is for a new landfill or an increase in landfill capacity (includes expansion), then the department shall hold a public hearing and the notice in subdivision 2 of this subsection will include such information.

4. For any application (other than subdivision 3 of this subsection), the notice shall notify the public of the 30-day public comment period and include the opportunity to request a public hearing. The department shall hold a public hearing on the draft permit whenever the department finds, on the

basis of requests, that:

- a. There is a significant public interest in the issuance, denial, modification, or revocation of the permit in question;
  - b. There are substantial, disputed issues relevant to the issuance, denial, modification, or revocation of the permit in question; and
  - c. The action requested is not, on its face, inconsistent with, or in violation of, these regulations, the Waste Management Act (§ 10.1-1400 et seq. of the Code of Virginia), or federal law or regulations.
5. The department also may hold a public hearing when it is believed that such a hearing might clarify one or more issues involved in a permit decision.
  6. If a public hearing is to be held, the department shall convene it 30 days or more after the notice is published in the local newspaper. The public hearing shall be conducted within the local government jurisdiction of the facility. A comment period shall extend for a 15-day period after the conclusion of the public hearing.
  7. A decision to permit, to deny a permit, or to modify the draft permit shall be rendered by the director within 90 days of the close of the hearing comment period.
  8. The permit applicant and the persons who commented during the public participation period shall be notified in writing of the decision on the draft permit. That decision may include denial of the permit (see also 9VAC20-81-550), issuance of the permit as drafted, or modification of the draft permit and issuance.
  9. No permit for a new solid waste management facility nor any modification to a permit allowing a facility expansion or an increase in capacity shall be issued until the director has made a written determination, after an investigation and analysis of the potential human health, environmental, transportation infrastructure, and transportation safety impacts and needs and an evaluation of comments by the host local government, other local governments and interested persons, that (i) the proposed facility, expansion, or increase protects present and future human health and safety and the environment; (ii) there is a need for the additional capacity; (iii) sufficient infrastructure will exist to safely handle the waste flow; (iv) the increase is consistent with locality imposed or state-imposed daily disposal limits; (v) the public interest will be served by the proposed facility's operation or the expansion or increase in capacity of a facility; and (vi) the proposed solid waste management facility, facility expansion, or additional capacity is consistent with regional and local solid waste management plans developed pursuant to § 10.1-1411 of the Code of Virginia.
  10. For nonhazardous industrial solid waste management facilities owned or operated by the generator of the waste managed at the facility, and that accept only waste generated by the facility owner or operator the following determination shall apply in lieu of subdivision 9 of this subsection. No new permit for a nonhazardous industrial solid waste management facility that is owned or operated by the generator of the waste managed at the facility, and that accepts only waste generated by the facility owner or operator, shall be issued until the director has determined, after investigation and evaluation of comments by the local government, that the proposed facility poses no substantial present or potential danger to human health or the environment. The department shall hold a public hearing within the county, city, or town where the facility is to be located prior to the issuance of any such permit for the management of nonhazardous industrial solid waste.
  11. Where either subdivision 9 or 10 of this subsection applies, the director may request updated information during the review of the permit application if the information on which the director's determination is based is no longer current. If, based on the analysis of the materials presented in the permit application, the determination required in § 10.1-1408.1 of the Code of Virginia cannot be made, the application will be denied in accordance with 9VAC20-81-550 A 6.
  12. Any permit for a new sanitary landfill and any permit modification authorizing expansion of an existing sanitary landfill shall incorporate the conditions required for a disposal capacity guarantee in § 10.1-1408.1 of the Code of Virginia. This provision does not apply to permit applications from one or more political subdivisions that will only accept waste from within those political subdivisions' jurisdiction or municipal solid waste generated within other political subdivisions pursuant to an interjurisdictional agreement.

**9VAC20-81-460. Part A permit application.**

A. The following information shall be included in the Part A permit application for all solid waste management facilities unless otherwise specified in this section. All plans and drawings of the Part A application shall be certified by a professional engineer or professional geologist.

~~B.~~ The Part A permit application consists of a letter stating the type of the facility for which the permit application is made and the certification required in subsection I of this section. The applicant shall submit the completed DEQ Form SW PTA (Part A Permit Application Form) and all required information and

attachments as detailed in this section.

B. C. A key map of the Part A permit application, delineating the general location of the proposed facility, shall be prepared and attached as part of the application. The key map shall be plotted on a seven and one-half minute U.S. Geological Survey topographical quadrangle. The quadrangle shall be the most recent revision available, shall include the name of the quadrangle and shall delineate a minimum of one mile from the perimeter of the proposed facility boundaries. One or more maps may be utilized where necessary to insure clarity of the information submitted.

C. D. A vicinity map shall be prepared and attached as part of the application. This vicinity map shall have a minimum scale of one inch equals 200 feet (1" = 200') and shall delineate an area of 500 feet from the perimeter of the property line of the proposed facility. A vicinity map may be prepared with a reduced scale if it does not fit in a sheet with the required minimum scale and multiple sheets may be used to meet the requirement of minimum scale. The vicinity maps may be an enlargement of a U.S. Geological Survey topographical quadrangle or a recent aerial photograph. Notes may be provided in the map if one or more of the following are not present within the delineated area. The vicinity map shall depict the following:

1. All homes, buildings, or structures including the layout of the buildings that will compose the proposed facility;
2. The surveyed boundaries for the property boundary, facility boundary, and waste management boundary, and the acreages within these boundaries;
3. The limits of the actual disposal operations within the boundaries of the proposed facility;
4. Lots and blocks taken from the tax map for the site of the proposed facility and all contiguous properties;
5. The base floodplain, where it passes through the map area; or, otherwise, a note indicating the expected flood occurrence period for the area;
6. Existing land uses and zoning classification;
7. All water supply wells, springs or intakes, both public and private;
8. All utility lines, pipelines or land-based facilities (including mines and wells); and
9. All parks, recreation areas, surface water bodies, dams, historic areas, wetlands and resource protection areas, monument areas, cemeteries, wildlife refuges, unique natural areas, or similar features.

D. E. Any applicant must demonstrate legal control over the site for the permit life.

E. F. For solid waste disposal facilities regulated under Part III (9VAC20-81-100 et seq.), site hydrogeologic and geotechnical reports by professional geologist or professional engineer.

1. The site investigation for a proposed landfill facility shall provide information regarding the geotechnical and hydrogeologic conditions at the site to allow a reasonable determination of the usefulness of the site for development as a landfill. The geotechnical exploration efforts shall be designed to provide information regarding the availability and suitability of onsite soils for use in the various construction phases of the landfill including liner, cover, drainage material, and cap. The hydrogeologic information shall be sufficient to determine the characteristics of the uppermost aquifer underlying the facility. Subsurface investigation programs conducted shall meet the minimum specifications here.

a. Borings shall be located to identify the uppermost aquifer within the proposed facility boundary, determine the ability to perform groundwater monitoring at the site, and provide data for the evaluation of the physical properties of soils and soil availability. Borings completed for the proposed facility shall be sufficient in number and depth to identify the thickness of the uppermost aquifer and the presence of any significant underlying impermeable zone in the waste management boundary. Impermeable zone shall not be fully penetrated within the anticipated fill areas, whenever possible. The number of borings shall be at a minimum in accordance with Table 5.1 as follows:

Waste Management Boundary Acreage	Total Number of Borings
Less than 10	4
10 - 49	8
50 - 99	14
100 - 200	20

More than 200

24  $\pm$  1 boring for each additional 10 acres

- b. The department reserves the right to require additional borings in areas in which the number of borings required by Table 5.1 is not sufficient to describe the geologic formations and groundwater flow patterns below the proposed solid waste disposal facility.
- c. In highly uniform geological formations, the number of borings may be reduced, as approved by the department.
- d. The borings shall employ a grid pattern, wherever possible, such that there is, at a minimum, one boring in each major geomorphic feature. The borings pattern shall enable the development of detailed cross sections through the proposed landfill site.
- e. Subsurface data obtained by borings shall be collected by standard soil sampling techniques. Diamond bit coring, air rotary drilling, or other appropriate methods, or a combination of methods shall be used as appropriate to characterize competent bedrock. The borings shall be logged from the surface to the lowest elevation (base grade) or to bedrock, whichever is shallower, according to standard practices and procedures. In addition, the borings required by Table 5.1 shall be performed on a continuous basis for the first 20 feet below the lowest elevation of the solid waste disposal facility or to the bed rock. Additional samples as determined by the professional geologist or professional engineer shall be collected at five-foot intervals thereafter.
- f. Excavations, test pits, and geophysical methods may be employed to supplement the soil boring investigation.
- g. At a minimum, four of the borings shall be converted to water level observations wells, well nests, piezometers, or piezometer nests to allow determination of the rate and direction of groundwater flow across the site. All groundwater monitoring points or water level measurement points shall be designed to allow proper abandonment by backfilling with an impermeable material. The total number of wells or well nests shall be based on the complexity of the geology of the site.
- h. Field analyses shall be performed in representative borings to determine the in situ hydraulic conductivity of the uppermost aquifer.
- i. All borings not to be utilized as permanent monitoring wells, and wells within the active solid waste disposal area, shall be sealed and excavations and test pits shall be backfilled and properly compacted to prevent possible paths of leachate migration. Boring sealing procedures shall be documented in the hydrogeologic report.
2. The geotechnical and hydrogeologic reports shall at least include the following principal sections:
- a. Field procedures. Boring records and analyses from properly spaced borings in the facility portion of the site. Final boring logs shall be submitted for each boring, recording soils or rock conditions encountered. Each log shall include the type of drilling and sampling equipment, date the boring was started, date the boring was finished, a soil or rock description in accordance with the United Soil Classification System or the Rock Quality Designation, the method of sampling, the depth of sample collection, the water levels encountered, and the Standard Penetration Test blow counts, if applicable. Boring locations and elevations shall be surveyed with a precision of 0.01 foot. At least one surveyed point shall be indelibly marked by the surveyor on each well. All depths of soil and rock as described within the boring log shall be corrected to National Geodetic Vertical Datum, if available.
- b. Geotechnical interpretations and report including complete engineering description of the soil units underlying the site.
- (1) Soil unit descriptions shall include estimates of soil unit thickness, continuity across the site, and genesis. Laboratory determination of the soil unit's physical properties shall be discussed.
- (2) Soil units that are proposed for use as a drainage layer, impermeable cap, or impermeable liner material shall be supported by laboratory determinations of the remolded permeability. Remolded hydraulic conductivity tests require a Proctor compaction test (ASTM D698) soil classification liquid limit, plastic limit, particle size distribution, specific gravity, percent compaction of the test sample, remolded density and remolded moisture content, and the percent saturation of the test sample. Proctor compaction test data and hydraulic conductivity test sample data shall be plotted on standard moisture-density test graphs.
- (3) The geotechnical report shall provide an estimate of the available volume of materials suitable for use as liner, cap, and drainage layer. It shall also discuss the anticipated uses of the onsite materials, if known.
- c. Hydrogeologic report.
- (1) The report shall include water table elevations, direction, and calculated rate of groundwater flow and similar information on the hydrogeology of the site. All raw data shall be submitted with

calculations.

(2) The report shall contain a discussion of field test procedures and results, laboratory determinations made on undisturbed samples, recharge areas, discharge areas, adjacent or areal usage, and typical radii of influence of pumping wells.

(3) The report shall also contain a discussion of the regional geologic setting, the site geology, and a cataloging and description of the uppermost aquifer from the site investigation and from referenced literature. The geologic description shall include a discussion of the prevalence and orientation of fractures, faults, and other structural discontinuities, and presence of any other significant geologic features. The aquifer description shall address homogeneity, horizontal and vertical extent, isotropy, the potential for groundwater remediation, if required, and the factors influencing the proper placement of a groundwater monitoring network.

(4) The report shall include a geologic map of the site prepared from one of the following sources as available, in order of preference:

- (a) Site specific mapping prepared from data collected during the site investigation;
- (b) Published geologic mapping at a scale of 1:24,000 or larger;
- (c) Published regional geologic mapping at a scale of 1:250,000 or larger; or
- (d) Other published mapping.

(5) At least two generally orthogonal, detailed site specific cross sections, which shall describe the geologic formations identified by the geologic maps prepared in accordance with subdivision 2 c (4) of this subsection at a scale that clearly illustrates the geologic formations, shall be included in the hydrogeologic report. Cross sections shall show the geologic units, approximate construction of existing landfill cells base grades, water table, surficial features, and bedrock along the line of the cross section. Cross section locations shall be shown on an overall facility map.

(6) Potentiometric surface maps for the uppermost aquifer that define the groundwater conditions encountered below the proposed solid waste disposal facility area based upon stabilized groundwater elevations. Potentiometric surface maps shall be prepared for each set of groundwater elevation data available. The applicant shall include a discussion of the effects of site modifications, seasonal variations in precipitation, and existing and future land uses of the site on the potentiometric surface.

(7) If a geological map or report from either the Department of ~~Mines, Minerals, and Energy~~ or the U.S. Geological Survey is published, it shall be included.

**F. G.** For solid waste management facilities regulated under Part IV (9VAC20-81-300 et seq.) of this chapter:

- 1. A cataloging and description of aquifers, geological features or any similar characteristic of the site that might affect the operation of the facility or be affected by that operation.
- 2. If a geological map or report from either the Department of ~~Mines, Minerals, and Energy~~ or the U.S. Geological Survey is published, it shall be included.

**G. H.** For a new sanitary landfill or for an increase in daily disposal limit, an adequacy report prepared by the Virginia Department of Transportation or other responsible agency. As required under § 10.1-1408.4 A 1 of the Code of Virginia, the report will address the adequacy of transportation facilities that will be available to serve the landfill, including daily travel routes and traffic volumes that correlate with the daily disposal limit, road congestion, and highway safety. The department may determine an adequacy report is not required for small increases in the daily disposal limit.

**H. I.** For a new sanitary landfill or an expansion of an existing sanitary landfill or an increase in capacity by expanding an existing facility vertically upward, a Landfill Impact Statement (LIS).

- 1. A report must be provided to the department that addresses the potential impact of the landfill on parks, recreational areas, wildlife management areas, critical habitat areas of endangered species as designated by applicable local, state, or federal agencies, public water supplies, marine resources, wetlands, historic sites, fish and wildlife, water quality, and tourism. This report shall comply with the statutory requirements for siting landfills in the vicinity of public water supplies or wetlands as set forth in §§ 10.1-1408.4 and 10.1-1408.5 of the Code of Virginia.
- 2. The report will include a discussion of the landfill configuration and how the facility design addresses any impacts identified in the report required under subdivision 1 of this subsection.
- 3. The report will identify all of the areas identified under subdivision 1 of this subsection that are within five miles of the facility.

**I. J.** For a new facility or an expansion of an existing facility, or an increase in capacity by expanding an existing facility vertically upward, a signed statement by the applicant that he has sent written notice to all adjacent property owners or occupants that he intends to develop a SWMF or expand laterally or vertically

upward of an existing facility on the site, a copy of the notice and the names and addresses of those to whom the notices were sent.

~~J.~~ K. The total capacity of the solid waste management facility.

~~K.~~ L. One or more of the following indicating that the public interest would be served by a new facility or a facility expansion, which includes:

1. Cost effective waste management for the public within the service area comparing the costs of a new facility or facility expansion to waste transfer, or other disposal options;
2. The facility provides protection of human health and safety and the environment;
3. The facility provides alternatives to disposal including reuse or reclamation;
4. The facility allows for the increased recycling opportunities for solid waste;
5. The facility provides for energy recovery or the subsequent use of solid waste, or both, thereby reducing the quantity of solid waste disposed;
6. The facility will support the waste management needs expressed by the host community; or
7. Any additional factors that indicate that the public interest would be served by the facility.

~~L.~~ M. For CCR surface impoundments regulated under Part VIII (9VAC20-81-800 et seq.) of this chapter, site hydrogeologic and geotechnical reports by a professional geologist or professional engineer that meet the requirements of 9VAC20-81-800.

### **9VAC20-81-470. Part B permit application for solid waste disposal facilities.**

A. Part B permit application requirements for all solid waste disposal facilities regulated under Part III (9VAC20-81-100 et seq.) are contained in this section. The Part B applications shall include the ~~following~~ requirements and documentation described in this section:

~~A.~~ B. Plans submitted as part of the Part B application shall include the following:

1. Design plans. Design plans shall be certified by a professional engineer and shall consist of, at least, the following:
  - a. A title sheet indicating the project title, who prepared the plans, the person for whom the plans were prepared, a table of contents, and a location map showing the location of the site and the area to be served.
  - b. An existing site conditions plans sheet indicating site conditions prior to development.
  - c. A base grade plan sheet indicating site base grades or the appearance of the site if it were excavated in its entirety to the base elevation, before installation of any engineering modifications or the beginning of any filing.
  - d. An engineering modification plan sheet indicating the appearance of the site after installation of engineering modifications. More than one plan sheet may be required for complicated sites. This plan is required only for those sites with engineering modifications.
  - e. A final site topography plan sheet indicating the appearance of the site, and final contours of the site at closing including the details necessary to prepare the site for long-term care.
  - f. A series of phasing plan sheets showing the progression of site development through time. At a minimum, a separate plan shall be provided for initial site preparations and for each subsequent major phase or new area where substantial site preparation must be performed. Each such plan shall include a list of construction items and quantities necessary to prepare the phase indicated.
  - g. A site monitoring plan showing the location of all devices for the monitoring of leachate production, groundwater quality, and gas production and venting. This plan shall include a table indicating the parameters to be monitored for the frequency of monitoring before and during site development. The groundwater monitoring plan shall include information as applicable under 9VAC20-81-250 or 9VAC20-81-260.
  - h. A series of site cross-sections shall be drawn perpendicular and parallel to the site base line at a maximum distance of 500 feet between cross-sections and at points of grade break and important construction features. The location of the cross-sections shall be shown on the plan sheets and the section labeled using the site grid system. Where applicable, each cross-section shall show existing, proposed base and final grades; soil borings and monitoring wells that the section passes through or is adjacent to; soil types, bedrock and water table; leachate control, collection, and monitoring systems; limits of filling for each major waste type; drainage control structures; access roads and ramps on the site perimeter and within the active fill area; the filling sequence or phases; and other site features.
  - i. Detailed drawings and typical sections for drainage control structures, access roads, fencing, leachate and gas control systems, and monitoring devices, buildings, signs, and other

construction details.

j. Plan sheets shall include:

- (1) A survey grid with base lines and ~~bench marks~~ benchmarks to be used for field control. The datum, units of measure, and coordinate system shall be identified, as applicable.
- (2) Limits of filling for each major waste type or fill area.
- (3) All drainage patterns and surface water drainage control structures both within the actual fill area and at the site perimeter. Such structures may include berms, ditches, sedimentation basins, pumps, sumps, culverts, pipes, inlets, velocity breaks, sodding, erosion matting, or other methods of erosion control.
- (4) Ground surface contours at the time represented by the drawing. Spot elevations shall be indicated for key features.
- (5) Areas to be cleared and grubbed and stripped of topsoil.
- (6) Borrow areas for liner materials, gas venting materials, berms, roadway construction, daily cover, and final cover.
- (7) All soil stockpiles including daily and final cover, topsoil, liner materials, gas venting materials, and other excavation.
- (8) Access roads and traffic flow patterns to and within the active fill area.
- (9) All temporary and permanent fencing.
- (10) The methods of screening such as berms, vegetation, or special fencing.
- (11) Leachate collection, control, storage, and treatment systems that may include pipes, manholes, trenches, berms, collection sumps, storage units, pumps, risers, liners, and liner splices.
- (12) Gas, leachate, and groundwater monitoring devices and systems.
- (13) Severe weather solid waste disposal areas.
- (14) Support buildings, scale, utilities, gates, and signs.
- (15) Special waste handling areas.
- (16) Construction notes and references to details.
- (17) Other site features.

2. Closure plan. A detailed closure plan shall be prepared and submitted. Such a plan shall be prepared in two parts, one reflecting those measures to be accomplished at the midpoint of the permit period, and the other when the useful life of the landfill is reached. The plan shall show how the facility will be closed to meet the requirements of 9VAC20-81-160 and 9VAC20-81-170, or 9VAC20-81-800. The plan shall include the procedures to be followed in closing the site, sequence of closure, time schedules, final plans of completion of closure to include final contours, and long-term care plan sheets showing the site at the completion of closing and indicating those items anticipated to be performed during the period of long-term care for the site. The plans shall include a table listing the items and the anticipated schedule for monitoring and maintenance. In many instances this information can be presented on the final site topography sheet.

3. ~~Postclosure~~ Post-closure plan. A ~~postclosure~~ post-closure care plan shall contain long-term care information including a discussion of the procedures to be utilized for the inspection and maintenance of: ~~run-off~~ runoff control structures; settlement; erosion damage; gas and leachate control facilities; monitoring for gas, leachate, and groundwater; and other long-term care needs.

B. C. A design report shall be submitted, which shall include supplemental discussions and design calculations, to facilitate department review and provide supplemental information including the following information:

1. The design report shall identify the project title; engineering consultants; site owner, permittee and operator; proposed permitted acreage; hours of operation; wastes to be accepted; site life; design capacity; and the daily disposal limit. It shall also identify any variances desired by the applicant.

2. A discussion of the basis for the design of the major features of the site, such as traffic routing, base grade and relationships to subsurface conditions, anticipated waste types and characteristics, phases development, liner design, leachate management system design, facility monitoring, and similar design features shall be provided. A list of the conditions of site development as stated in the department determination of site feasibility and the measures taken to meet the conditions shall be included. A discussion of all calculations, such as refuse-cover balance computations, stockpile sizing estimates, estimate of site life, and ~~run-off~~ runoff and leachate volume estimates shall be included. The calculations shall be summarized with the detailed equations presented in an appendix.

3. Specifications, including detailed instructions to the site operator for all aspects of site construction.

a. Initial site preparations including specifications for clearing and grubbing, topsoil stripping, other excavations, berm construction, drainage control structures, leachate collection system, access roads and entrance, screening, fencing, groundwater monitoring, and other special design features.

b. A plan for initial site preparation including a discussion of the field measurements, photographs to be taken, sampling and testing procedures to be utilized to verify that the in-field conditions encountered were the same as those defined in the feasibility report, and to document that the site was constructed according to the engineering plans and specifications submitted for department approval.

~~C.~~ D. Financial assurance documentation. When required by the Financial Assurance Regulations of Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70), the applicant shall provide the completed documentation to demonstrate compliance with those regulations; proof of financial responsibility must be for the entity identified in accordance with 9VAC20-81-450 B 10.

~~D.~~ E. DEQ Form SW PTB (Part B Permit Application Form). The applicant shall submit a completed DEQ Form SW PTB.

**9VAC20-81-485. Operations manual requirements for solid waste management facilities.**

A. Solid waste disposal facilities. An operations manual shall be prepared and maintained in the operating record. The operations manual shall include a certification page signed by a responsible official. This signature shall certify the manual meets the requirements of this chapter. This manual shall be reviewed and recertified ~~annually (by December 31 of each calendar year)~~ on an annual basis (at least once every 12 months) to ensure consistency with current operations and regulatory requirements, and shall be made available for review by the department upon request. The operations manual for disposal facility operation shall contain at least the following plans:

1. An operations plan that at a minimum includes:

a. Explanation of how the design and construction plans will be implemented from the initial phase of operation until closure;

b. Municipalities, industries, and collection and transportation agencies served;

c. Waste types and quantities to be disposed; and the daily disposal limit;

d. Detailed instructions to the site operator regarding all aspects of site operation in order to ensure that the operational requirements of Part III (9VAC20-81-100 et seq.) of this chapter are achieved. References to specifications on the plan sheet shall be pointed out as well as additional instructions included, where appropriate. At a minimum, the plan specifications shall include:

(1) Daily operations including a discussion of the timetable for development, waste types accepted or excluded, inspection of incoming waste, typical waste handling techniques, hours of operation, onsite traffic routing control, schedules for waste delivery vehicle flow, methods of enforcement of traffic flow plans for the waste delivery vehicles, drainage and erosion control, windy, wet and cold weather operations, preparations for severe weather and storm events, fire protection equipment, manpower, methods for handling of any unusual waste types, methods for vector, dust and odor, and noise control, daily cleanup, direction of filling, salvaging, recordkeeping, parking for visitors and employees, monitoring, maintenance, closure of filled areas, gas and leachate control methods, backup equipment with names and telephone numbers where equipment may be obtained, and other special design features;

(2) Development of subsequent phases; and

(3) Site closing information consisting of a discussion of those actions necessary to prepare the site for long-term care and final use in the implementation of the closure plan.

e. Description of monitoring, maintenance, backup equipment, types of records maintained, and other site-specific instructions for maintaining the leachate collection system, including the:

(1) Schedule and frequency for inspecting and servicing pumps and associated equipment (motors, gaskets, bearings, impellers, alarms, flow meters, control panel, etc.);

(2) Schedule and frequency for cleaning out leachate lines as needed to maintain proper functionality of the system;

(3) Methods for documenting equipment maintenance (such as leachate line clean-outs);

(4) Methods for monitoring (i.e., estimating or measuring) and recording leachate head over the liner and leachate head exceedances;

(5) Instructions for leachate operations in advance of a storm event; and

(6) Frequency and method for recording leachate volumes generated and disposed (pump or flow meter readings, etc.):

2. An inspection plan that at a minimum includes:
  - a. A schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of Part III (9VAC20-81-100 et seq.) of this chapter.
  - b. The frequency of inspection based on the rate of potential equipment deterioration or malfunction and the probability of an adverse incident occurring if the deterioration or malfunction goes undetected between inspections. The plan shall establish ~~the~~ at least a minimum frequencies monthly frequency for inspections as required in 9VAC20-81-140. This plan shall identify areas of the facility subject to spills such as loading and unloading areas and areas in which significant adverse environmental or health consequences may result if breakdown occurs.
  - c. A schedule for inspecting monitoring, safety, and emergency equipment; security devices; and process operating and structural equipment.
  - d. The types of potential problems that may be observed during the inspection and any maintenance activities required as a result of the inspection.
3. A health and safety plan that includes description of measures to protect the facility and other personnel from injury and is consistent with the requirements of 29 CFR Part 1910.
4. An unauthorized waste control plan that includes, at a minimum, the methods to be used by the operator to prevent unauthorized disposal of hazardous wastes, bulk liquids, or other wastes not authorized for management or disposal in the facility in order to meet the requirements of 9VAC20-81-140.
5. An emergency contingency plan that includes:
  - a. Delineation of procedures for responding to fire, explosions, or any unplanned sudden or nonsudden releases of harmful constituents to the air, soil, or surface water;
  - b. Description of the actions facility personnel shall take in the event of various emergency situations;
  - c. Description of arrangements made with the local police and fire department that allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of personnel responding to an emergency situation; ~~and~~
  - d. A list of names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator for the facility. This list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and the others shall be listed in the order in which they will assume responsibility as alternates;
  - e. Procedures to be employed during periods of nonoperation or nonprocessing, including procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities; and
  - f. An attached fire control plan for active landfills that includes:
    - (1) Fire suppression methods and equipment, including procedures for applying soil and other fire suppression materials (e.g., water, foam) as appropriate;
    - (2) Sources and supplies for soil and water;
    - (3) Containment of runoff and leachate;
    - (4) Diversion and staging of incoming waste;
    - (5) Isolation or shutdown of gas remediation systems, as applicable;
    - (6) Entry routes for emergency responders;
    - (7) Evacuation and notification procedures; and
    - (8) Backup contractors.
6. A landscaping plan that shall:
  - a. Delineate existing site vegetation to be retained;
  - b. Discuss methods to be employed in order to ensure protection of vegetation to be retained during the clearing, grading and construction phases of the project and the supplemental vegetation to be planted; and
  - c. Provide information relating to vegetation type, location and purpose, such as for buffer, screening or aesthetics, and schedules for planting, shall accompany the plan.

B. Other solid waste management facilities. An operations manual shall be prepared and maintained in the operating record. The Operations Manual shall include a certification page signed by a responsible official. This signature shall certify the manual meets the requirements of this chapter. This manual shall be

reviewed and re-certified ~~annually (by December 31 of each calendar year)~~ on an annual basis (at least once every 12 months) to ensure consistency with current operations and regulatory requirements and shall be made available to the department upon request. The manual for facility operation shall contain at least the following plans:

1. An operations plan that at a minimum includes:

a. An explanation of how the design and construction plans will be implemented from the initial phase of operation until closure.

b. Detailed instructions to the site operator regarding all aspects of site operation in order to ensure that the applicable operational requirements of Part IV (9VAC20-81-300 et seq.) are achieved. Daily operations including a discussion of the timetable for development, waste types accepted or excluded, typical waste handling techniques, daily process rate, capacities of any waste storage areas, ultimate disposal location for all facility-generated waste residue, hours of operation, onsite traffic routing control, schedules for waste delivery vehicle flow, methods of enforcement of traffic flow plans for the waste delivery vehicles, wastewater collection, stormwater collection, drainage and erosion control, windy, wet and cold weather operations, preparations for severe weather and storm events, fire protection equipment, manpower, methods for handling of any unusual waste types, methods for vector, dust and odor, and noise control, daily cleanup, salvaging, ~~record-keeping~~ recordkeeping, parking for visitors and employees, monitoring, backup equipment with names and telephone numbers where equipment may be obtained, and other special design features. The daily operations section of the operations manual may be developed as a removable section to improve accessibility for the site operator.

c. Development of subsequent phases of the facility, if applicable.

d. Site closing information consisting of a discussion of those actions necessary to prepare the site for long-term care and final use in the implementation of the closure plan.

e. For composting facilities:

(1) The description of types of wastes that will be managed at the facility. This description must properly categorize the compost feedstocks in accordance with 9VAC20-81-310 A. If the specific materials are not listed in that section, a discussion will be prepared that compares the materials that the facility will receive with the materials listed in the applicable feedstock category and justifies the categorization of the proposed feedstock. For each type of material an approximate C:N ratio will be provided. The expected quantity of any bulking agent or amendment will be provided (if applicable); and any expected recycle of bulking agent or compost. The plan shall include the annual solid waste input, the service area population (both present and projected if applicable), and any seasonal variations in the solid waste type and quantity;

(2) A discussion of the composting process, including:

(a) For Type A compost facilities the following will be provided:

(i) A copy of the manufacturer's operating manual and drawings and specifications of the composting unit.

(ii) A discussion of the unit's requirements for power, water supply, and wastewater removal, and the steps taken to accommodate these requirements.

(b) For Type B compost facilities the following will be provided:

(i) A description of the configuration of the composting process, including compost pile sizing, and orientation, provisions for water supply, provisions for wastewater disposal, and an equipment list.

(ii) A discussion of procedures and frequency for moisture, and temperature monitoring, and aeration.

(iii) A discussion of pile formation and feedstock proportioning and feedstock preparation;

(3) A discussion of the method and frequency of final product testing in accordance with 9VAC20-81-340;

(4) A schedule of operation, including the days and hours that the facility will be open, preparations before opening, and procedures followed after closing for the day;

(5) Anticipated daily traffic flow to and from the facility, including the number of trips by private or public collection vehicles;

(6) The procedure for unloading trucks, including frequency, rate, and method;

(7) A description of the ultimate use for the finished compost, method for removal from the site and a plan for use or disposal of finished compost that cannot be used in the expected manner due to poor quality or change in market conditions; and

(8) A discussion of maintenance and inspections in accordance with 9VAC20-81-340 C 1 i.

f. For centralized waste treatment facilities:

(1) A description of methods to determine the characteristics of the treated waste, frequency of testing and the action the facility owner or operator will take whenever the material fails to meet applicable standards.

(2) For facilities engaged in the reclamation of soil, a description of the methods and frequencies of analysis of the reclaimed product shall be provided as required by 9VAC20-81-660.

g. For materials recovery facilities:

(1) A description of methods to determine the usefulness of the recovered material, frequency of testing, and the action the facility owner or operator will take whenever the material fails the standards applicable to the recovered product and must be disposed of as waste.

(2) For facilities engaged in the reclamation of soil, a description of the methods and frequencies of analysis of the reclaimed product shall be provided as required by 9VAC20-81-660.

(3) For facilities that store waste tires, the provisions of 9VAC20-81-640 B, C, and D, as applicable.

h. For waste piles:

(1) A description of types of wastes that will be managed at the facility, of the storage or treatment activity, of any required testing including test methods and frequencies, and sampling techniques.

(2) A description of the management and disposition of waste materials will be provided that addresses waste materials that are undesirable and will not be received at the facility.

(3) Descriptions of first-in, first-out waste management procedures to ensure that the oldest waste materials being stored are sent offsite for re-use or disposal prior to newer materials.

(4) A fire prevention and suppression program designed to minimize hazards when storing organic waste streams.

2. An inspection plan that at a minimum includes:

a. A schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of Part IV (9VAC20-81-300 et seq.) of this chapter.

b. The frequency of inspection shall be based on the rate of potential equipment deterioration or malfunction and the probability of an adverse incident occurring if the deterioration or malfunction goes undetected between inspections. The plan shall establish the at least a minimum frequencies monthly frequency for inspections as required in 9VAC20-81-340 9VAC20-81-350. This plan shall identify areas of the facility subject to spills such as loading and unloading areas and areas in which significant adverse environmental or health consequences may result if breakdown occurs.

c. A schedule for inspecting monitoring, safety, and emergency equipment; security devices; and process operating and structural equipment.

d. The types of potential problems that may be observed during the inspection and any maintenance activities required as a result of the inspection.

3. A health and safety plan that includes description of measures to protect the facility and other personnel from injury and is consistent with the requirements of 29 CFR Part 1910.

4. An unauthorized waste control plan that includes, at a minimum, the methods to be used by the operator to prevent unauthorized disposal of hazardous wastes, regulated medical wastes, bulk liquids, or other wastes not authorized for management or disposal in the facility in order to meet the applicable requirements of 9VAC20-81-340 9VAC20-81-300.

5. An emergency contingency plan that includes:

a. Delineation of procedures for responding to fire, explosions, or any unplanned sudden or nonsudden releases of harmful constituents to the air, soil, or surface water;

b. Description of the actions facility personnel shall take in the event of various emergency situations;

c. Description of arrangements made with the local police and fire department that allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of personnel responding to an emergency situation; ~~and~~

d. A list of names, addresses and phone numbers (office and home) of all persons qualified to act as emergency coordinator for the facility. This list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and the others shall be listed in the order in which they will assume responsibility as alternates;

e. Procedures to be employed during periods of nonoperation or nonprocessing, including procedures to be employed in the event of equipment breakdown that will require standby equipment, extension of operating hours, or diversion of solid waste to other facilities; and

f. For materials recovery facilities, centralized waste treatment facilities, and waste to energy and incineration facilities, the emergency loading, unloading, storage, transfer, or other disposal capabilities to be used when the facility downtime exceeds 24 hours.

C. CCR surface impoundments. Operating plans meeting the requirements of 9VAC20-81-800 shall be prepared, implemented, and placed in the facility's operating record.

#### **9VAC20-81-490. Effect of the permit.**

A. A completed permit for a solid waste management facility shall be prepared at the conclusion of the procedures outlined in 9VAC20-81-450. The permit shall be prepared in detail to establish the construction requirements, monitoring requirements, operating limitations or guides, waste limitations if any, and any other details essential to the operation and maintenance of the facility and its closure. Before receipt of waste by the facility, the applicant must:

1. Notify the department, in writing, that construction has been completed; and submit to the department a letter from a professional engineer certifying that the facilities have been completed in accordance with the approved plans and specifications and is ready to begin operation. This certification letter is in addition to the CQA certification required in 9VAC20-81-130 Q R 3 and must be provided by a different individual than the CQA certification. This certification letter is typically provided by the design engineer.
2. Arrange for a department representative to inspect the site and confirm that the site is ready for operation.

B. Certificate-to-Operate (CTO). Following review of a complete CQA certification and site inspection the department shall issue a CTO authorizing the facility to begin receiving waste. The facility shall not receive waste until a CTO has been issued by the department.

C. Inspections. Each facility permitted to accept solid waste requires periodic inspection and review of records and reports. Such requirements shall be set forth in the final permit issued by the department. The permit applicant by accepting the permit, agrees to the specified periodic inspections.

D. Compliance with a valid permit during its term constitutes compliance, for purposes of enforcement, with the Virginia Waste Management Act. However, a permit may be modified, revoked and reissued, or revoked for cause as set forth in 9VAC20-81-570 and 9VAC20-81-600.

E. The issuance of a permit does not convey any property rights of any sort, or any exclusive privilege.

F. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, Commonwealth, or local law or regulations.

G. A permit may be transferred by the permittee to a new owner or operator only if the permit has been revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary. Upon presentation of the financial assurance proof required by 9VAC20-70 by the new owner, the department will release the old owner from his closure and financial responsibilities and acknowledge existence of the new or modified permit in the name of the new owner.

H. This section provides for the approval of permits or permit modifications that include a time allowance for the permittee to achieve the new standards contained in the approved permit or permit modification.

1. The permit may specify a compliance schedule ~~of compliance~~ leading to compliance with this chapter.
  - a. Any schedules of compliance under this subsection shall require compliance as soon as possible.
  - b. Except as otherwise provided, if a permit establishes a compliance schedule ~~of compliance~~ that exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.
    - (1) The time between interim dates shall not exceed one year; and
    - (2) If the time necessary for completion of any interim requirement is more than one year and is not readily divisible into stages of completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.
  - c. The permit shall be written to require that no later than 14 days following each interim date and the final date of compliance, a permittee shall notify the department, in writing, of his compliance or noncompliance with the interim or final requirements.
2. A permit applicant or permittee may cease conducting regulated activities (by receiving a terminal

volume of solid waste, and, in case of treatment or storage facilities, closing pursuant to applicable requirements, or, in case of disposal facilities, closing and conducting ~~post-closure~~ post-closure care pursuant to applicable requirements) rather than continue to operate and meet permit requirements as follows:

- a. If the permittee decides to cease conducting regulated activities at a specified time for a permit that has already been issued:
  - (1) The permit may be modified to contain a new or additional schedule leading to timely cessation of activities; or
  - (2) The permittee shall cease conducting permitted activities before noncompliance with any interim or final compliance schedule requirement already specified in the permit.
- b. If the decision to cease conducting regulated activities is made before the issuance of a permit whose terms will include the termination date, the permit shall contain a schedule leading to termination that will ensure timely compliance with applicable requirements.
- c. If the permittee is undecided whether to cease conducting regulated activities, the director may issue or modify a permit to continue two schedules as follows:
  - (1) Both schedules shall contain an identical interim deadline requiring a final decision on whether to cease conducting regulated activities no later than a date that ensures sufficient time to comply with applicable requirements in a timely manner if the decision is to continue conducting regulated activities;
  - (2) One schedule shall lead to timely compliance with applicable requirements;
  - (3) The second schedule shall lead to cessation of regulated activities by a date that will ensure timely compliance with applicable requirements; and
  - (4) Each permit containing two schedules shall include a requirement that, after the permittee has made a final decision, he shall follow the schedule leading to compliance if the decision is to continue conducting regulated activities, and follow the schedule leading to termination if the decision is to cease conducting regulated activities.
- d. The applicant's decisions to cease conducting regulated activities shall be evidenced by a firm public commitment satisfactory to the department, such as a resolution of the board of directors of a corporation.

**9VAC20-81-530. Recording and reporting required of a permittee.**

- A. A permit shall specify:
  1. Required monitoring, including type, intervals and frequency, sufficient to yield data that are representative of the monitored activity;
  2. Requirements concerning the proper use, maintenance, and installation of monitoring equipment or methods, including biological monitoring methods when appropriate; and
  3. Applicable reporting requirements based upon the impact of the regulated activity and as specified in this chapter.
- B. A permittee shall be subject to the following whenever monitoring is required by the permit:
  1. The permittee shall retain records at the permitted facility or another location approved by the department. Records shall include all records required by the facility permit, these regulations, or other applicable regulations. Records of all required monitoring information, including all calibration and maintenance records will be maintained for at least three years from the sample or measurement date. The director may request that this period be extended. For operating landfills, records of the most recent gas and groundwater monitoring event will be maintained at the facility.
  2. Records of monitoring information shall include:
    - a. The date, exact place, and time of sampling or measurements;
    - b. The individuals who performed the sampling or measurements;
    - c. The dates analyses were performed;
    - d. The individuals who performed the analyses;
    - e. The analytical techniques or methods used; and
    - f. The results of such analyses.
  3. Required monitoring results shall be maintained on file for inspection by the department.
- C. A permittee shall be subject to the following reporting requirements:
  1. Written notice of any planned physical alterations to the permitted facility shall be submitted to the department and approved before such alterations are to occur, unless such items were included in the plans and specifications approved by the department.

2. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit, shall be submitted no later than 14 days following each schedule date.

3. The permittee shall report to the department any noncompliance or unusual condition that may endanger health or environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the circumstances and its cause; the period of occurrence, including exact dates and times, and, if the circumstance has not been corrected, the anticipated time it is expected to continue. It shall also contain steps taken or planned to reduce, eliminate, and prevent reoccurrence of the circumstances resulting in an unusual condition or noncompliance. Written submissions may be submitted by mail or electronically. Incidents or circumstances that require reporting include:

a. All fires and explosions, and any emergency that results in facility shutdown for over 24 hours or that damages key facility infrastructure, such as a landfill liner or final cover system, leachate management system, or gas control system;

b. Receipt of regulated hazardous waste, PCB waste, regulated medical waste, or other unauthorized waste at the facility;

c. Unauthorized discharge of leachate or other pollutant to surface waters, and any release of leachate outside a landfill disposal unit boundary or leachate storage unit;

d. Depth of 30 cm or more of leachate over the landfill liner, excluding manifold trenches and sumps;

e. Methane at or above the compliance level (i.e., the LEL for methane at any probe within the facility [ ~~boundary~~ ] gas monitoring network, and 25% of the LEL for methane in landfill structures, excluding gas control or recovery system components);

f. When the active gas control or remediation system is no longer operating in such a manner as to maintain compliance with this chapter, including any shutdowns of the system lasting longer than 48 hours; and

g. When landfill conditions indicate the presence or strong likelihood of subsurface fire, combustion, subsurface reaction, or oxidation.

D. Copies of all reports required by the permit, and records of all data used to complete the permit application must be retained by the permittee for at least three years from the date of the report or application. The director may request that this period be extended. Documentation of training received by staff to comply with training requirements found in this chapter shall be maintained for at least three years from the date of the training.

E. When the permittee becomes aware that he failed to submit any relevant facts or submitted incorrect information in a permit application or in any report to the director, he shall promptly submit such omitted facts or the correct information with an explanation.

#### **9VAC20-81-570. Revocation or suspension of permits.**

A. Any permit issued by the director may be revoked when any of the following conditions exist:

1. The permit holder violates any regulation of the board or any condition of a permit where such violation poses a threat of release of harmful substances into the environment or presents a hazard to human health;

2. The solid waste management facility is maintained or operated in such a manner as to constitute an open dump or pose a substantial present or potential hazard to human health or the environment;

3. The solid waste management facility because of its location, construction, or lack of protective construction or measures to prevent pollution, constitute an open dump or poses a substantial present or potential hazard to human health or the environment;

4. Leachate or residues from the solid waste management facility used for disposal, storage, or treatment of solid waste pose a threat of contamination or pollution of the air, surface waters, or groundwater in a manner constituting an open dump or resulting in a substantial present or potential hazard to human health or the environment;

5. The person to whom the permit was issued abandons, sells, leases, or ceases to operate the facility permitted;

6. The owner or operator fails to maintain a financial assurance mechanism if required to do so by 9VAC20-70;

7. As a result of changes in key personnel, the director finds that the requirements necessary for

issuance of a permit are no longer satisfied;

8. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in applying for a permit or in his disclosure statement, or any other report or certification required under this law or under the regulations of the board, or has knowingly or willfully failed to notify the director of any material change to the information in the disclosure statement;

9. Any key personnel has been convicted of any following crimes punishable as felonies under the laws of the Commonwealth or the equivalent of them under the laws of any other jurisdiction: murder; kidnapping; gambling; robbery; bribery; extortion; criminal usury; arson; burglary; theft and related crimes; forgery and fraudulent practices; fraud in the offering, sale, or purchase of securities; alteration of motor vehicle identification numbers; unlawful manufacture, purchase, use, or transfer of firearms; unlawful possession or use of destructive devices or explosives; violation of the Drug Control Act, Chapter 34 (§ 54.1-3400 et seq.) of Title 54.1 of the Code of Virginia; racketeering; or violation of antitrust laws; or has been adjudged by an administrative agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth, or any other state and the director determines that such conviction or adjudication is sufficiently probative of the applicant's inability or unwillingness to operate the facility in a lawful manner, as to warrant denial, revocation, modification, or suspension of the permit. In making such determination, the director shall consider:

- a. The nature and details of the acts attributed to key personnel;
- b. The degree of culpability of the applicant, if any;
- c. The applicant's policy or history of discipline of key personnel for such activities;
- d. Whether the applicant has substantially complied with all rules, regulations, permits, orders, and statutes applicable to the applicant's activities in Virginia;
- e. Whether the applicant has implemented formal management controls to minimize and prevent the occurrence of such violations; and
- f. Mitigation based upon demonstration of good behavior by the applicant including, without limitation, prompt payment of damages, cooperation with investigations, termination of employment or other relationship with key personnel or other persons responsible for violations or other demonstrations of good behavior by the applicant that the director finds relevant to its decision; or

10. All ~~postclosure~~ post-closure care activities have been terminated by the department in accordance with 9VAC20-81-170 ~~E~~ D.

#### B. Revocation and reissuance.

1. If the director finds that solid wastes are no longer being stored, treated, or disposed at a facility in accordance with department regulations, the director may revoke the permit issued for such facility and reissue it with a condition requiring the person to whom the permit was issued to provide closure and ~~postclosure~~ post-closure care of the facility.

2. If the director is notified by the permittee that the ownership of the facility will be transferred to a new owner or that the operation will be conducted by a new operator, the director will upon receipt of financial assurance documents required by Financial Assurance Regulations of Solid Waste Disposal, Transfer, and Treatment Facilities (9VAC20-70), revoke the original permit and reissue it to the new owner or operator.

C. Except in an emergency, a facility posing a substantial threat to public health or the environment, the director may revoke a permit only after a hearing, or a waiver of a hearing, in accordance with the Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

D. If the director summarily suspends a permit pursuant to an emergency based on subdivision 18 of § 10.1-1402 of the Virginia Waste Management Act, the director shall hold a conference pursuant to § 2.2-4019 of the Virginia Administrative Process Act, within 48 hours to consider whether to continue the suspension pending a hearing to modify or revoke the permit, or to issue any other appropriate order. Notice of the hearing shall be delivered at the conference or sent at the time the permit is suspended. Any person whose permit is suspended by the director shall cease activity for which permit was issued until the permit is reinstated by the director or by a court.

#### **9VAC20-81-600. Modification of permits.**

A. Permits may be modified at the request of any interested person or upon the director's initiative. However, permits may only be modified for the reasons specified in subsections E and F of this section. All requests shall be in writing and shall contain facts or reasons supporting the request. Any permit modification authorizing expansion of an existing sanitary landfill shall incorporate the conditions required for a disposal capacity guarantee in § 10.1-1408.1 P of the Code of Virginia. This provision does not apply to permit applications from one or more political subdivisions that will only accept waste from within those

political subdivisions' jurisdiction or municipal solid waste generated within other political subdivisions pursuant to an interjurisdictional agreement.

B. If the director decides the request is not justified, he shall send the requester a response providing justification for the decision.

C. If the director tentatively decides to modify, he shall prepare a draft permit incorporating the proposed changes. The director may request additional information and may require the submission of an updated permit application. In a permit modification under subsection E of this section, only those conditions to be modified shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect. During any modification proceeding the permittee shall comply with all conditions of the existing permit until the modified permit is issued.

D. When the director receives any information, he may determine whether or not one or more of the causes listed for modification exist. If cause exists, the director may modify the permit on his own initiative subject to the limitations of subsection E of this section and may request an updated application if necessary. If a permit modification satisfies the criteria in subsection F of this section for minor modifications, the permit may be modified without a draft permit or public review. Otherwise, a draft permit shall be prepared and other appropriate procedures followed.

E. Causes for modification. The director may modify a permit upon his own initiative or at the request of a third party:

1. When there are material and substantial alterations or additions to the permitted facility or activity that occurred after permit issuance that justify the application of permit conditions that are different or absent in the existing permit;
2. When there is found to be a possibility of pollution causing significant adverse effects on the air, land, surface water, or groundwater;
3. When an investigation has shown the need for additional equipment, construction, procedures and testing to ensure the protection of the public health and the environment from adverse effects;
4. If the director has received information pertaining to circumstances or conditions existing at the time the permit was issued that was not included in the administrative record and would have justified the application of different permit conditions, the permit may be modified accordingly if in the judgment of the director such modification is necessary to prevent significant adverse effects on public health or the environment;
5. When the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;
6. When the director determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, or material shortage or other events over which the permittee has little or no control and for which there is no reasonably available remedy;
7. When a modification of a closure plan is required under 9VAC20-81-160, 9VAC20-81-360, or 9VAC20-81-800 and the permittee has failed to submit a permit modification request within the specified period;
8. When the corrective action program specified in the permit under 9VAC20-81-260 or 9VAC20-81-800 has not brought the facility into compliance with the groundwater protection standard within a reasonable period of time; or
9. When cause exists for revocation under 9VAC20-81-570 and the director determines that a modification is more appropriate.

F. Permit modification at the request of the permittee.

TABLE 5.2 PERMIT MODIFICATIONS	
MAJOR	1. Implementation of a groundwater corrective action program as required by 9VAC20-81-260 or 9VAC20-81-800
	2. Change in the remedy applied as part of the groundwater corrective action program
	3. Groundwater monitoring plan for an existing facility where no written plan has previously been provided
	4. Changes to the design of final closure cover

	5. Landfill mining
	6. Reduction in the <del>postclosure</del> <u>post-closure</u> care period
	7. Changes in <del>postclosure</del> <u>post-closure</u> use of the property with disturbance of cover
	8. All new or modifications of a leachate collection tank or a leachate collection surface impoundment
	9. Addition of new landfill units
	10. Expansion or increase in capacity
	11. Increase in daily disposal limit
	12. Addition or modification of a liner, leachate collection system, leachate detection system
	13. Incorporation or modification of a Research, Development, and Demonstration Plan
MINOR	Any change not specified as major modification (above) or a permittee change (below)
	1. Correction of typographical errors
	2. Equipment replacement or upgrade with functionally equivalent components
	3. Replacement of an existing leachate tank with a tank that meets the same design standards and has a capacity within +/-10% of the replaced tank
	4. Replacement with functionally equivalent, upgrade, or relocation of emergency equipment
PERMITTEE CHANGE	5. Changes in name, address, or phone number of contact personnel
	6. Replacement of an existing well that has been damaged or rendered nonoperable, without change to location, design, or depth of the well
	7. Changes to the expected year of final closure, where other permit conditions are not changed
	8. Changes in <del>postclosure</del> <u>post-closure</u> use of the property, without disturbance of the cover
	9. Modification of a leachate tank management practice

1. Permittee change. Items listed under Permittee Change in Table 5.2 may be implemented without approval of the department. If a permittee changes such an item, the permittee shall:

- a. Notify the department of the change at least 14 calendar days before the change is put into effect, indicating the affected permit conditions; and
- b. Notify the governing body of the county, city, or town in which the facility is located, within 90 calendar days after the change is put into effect.

2. Minor modifications.

a. Minor modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment.

b. Minor modifications may be requested for changes that will result in a facility being more protective of human health and the environment or equivalent to the standards contained in this chapter, unless otherwise noted in Table 5.2. The request for such a minor permit modification will be accompanied by a description of the desired change and an explanation of the manner in which the health and environment will be protected in a greater degree than required by the

chapter.

c. Minor permit modifications may be made only with the prior written approval of the department. The permittee shall notify the department that a minor modification is being requested. Notification of the department shall be provided by certified mail or other means that establish proof of delivery. This notice shall specify the changes being made to permit conditions or supporting documents referenced by the permit and shall include an explanation of why they are necessary. Along with the notice, the permittee shall provide the applicable information required by 9VAC20-81-460 and 9VAC20-81-470 or as required by 9VAC20-81-480.

d. The permittee shall send a notice of the modification to the governing body of the county, city or town in which the facility is located. This notification shall be made within 90 days after the department approves the request.

### 3. Major modifications.

a. Major modifications substantially alter the facility or its operation. Major modifications are listed in Table 5.2.

b. The permittee shall submit a modification request to the department that:

(1) Describes the exact change to be made to the permit conditions and supporting documents referenced by the permit;

(2) Identifies that the alteration is a major modification;

(3) Contains an explanation of why the modification is needed; and

(4) Provides the applicable information required by 9VAC20-81-460 and 9VAC20-81-470, by 9VAC20-81-460 and 9VAC20-81-475, or as required by 9VAC20-81-480.

c. No later than 90 days after receipt of the notification request, the director will determine whether the information submitted under subdivision 3 b (4) of this subsection is adequate to formulate a decision. If found to be inadequate, the permittee will be requested to furnish additional information within 30 days of the request by the director to complete the modification request record. The 30-day period may be extended at the request of the applicant. After the completion of the record, the director will either:

(1) Approve the modification request, with or without changes, and draft a permit modification accordingly;

(2) Deny the request; or

(3) Approve the request, with or without changes, as a temporary authorization having a term of up to 180 days in accordance with subdivision 3 of this subsection.

d. If the director proposes to approve the permit modification, he will proceed with the permit issuance in accordance with 9VAC20-81-450 E.

e. The director may deny or change the terms of a major permit modification request under subdivision F 3 b of this section for the following reasons:

(1) The modification request is incomplete;

(2) The requested modification does not comply with the appropriate requirements of Part III (9VAC20-81-100 et seq.), Part IV (9VAC20-81-300 et seq.), or Part VIII (9VAC20-81-800 et seq.) of this chapter or other applicable requirements; or

(3) The conditions of the modification fail to protect human health and the environment.

### 4. Temporary authorizations.

a. Upon request of the permittee, the director may, without prior public notice and comment, grant the permittee a temporary authorization in accordance with the requirements of subdivision 4 of this subsection. Temporary authorizations shall have a term of not more than 180 days.

b. (1) The permittee may request a temporary authorization for any major modification that meets the criteria in subdivision 4 c (2) (a) or (b) of this subsection; or that meets the criteria in subdivision 4 c (2) (c) and (d) of this subsection and provides improved management or treatment of a solid waste already listed in the facility permit.

(2) The temporary authorization request shall include:

(a) A description of the activities to be conducted under the temporary authorization;

(b) An explanation of why the temporary authorization is necessary; and

(c) Sufficient information to ensure compliance with the standards of Part III (9VAC20-81-100 et seq.), Part IV (9VAC20-81-300 et seq.), or Part VIII (9VAC20-81-800 et seq.) of this chapter.

(3) The permittee shall send a notice about the temporary authorization request to all persons on the facility mailing list. This notification shall be made within seven days of submission of the

authorization request.

c. The director shall approve or deny the temporary authorization as quickly as practical. To issue a temporary authorization, the director shall find:

(1) The authorized activities are in compliance with the standards of Part III (9VAC20-81-100 et seq.), Part IV (9VAC20-81-300 et seq.), or Part VIII (9VAC20-81-800 et seq.) of this chapter.

(2) The temporary authorization is necessary to achieve one of the following objectives before action is likely to be taken on an modification request:

(a) To facilitate timely implementation of closure or corrective action activities;

(b) To prevent disruption of ongoing waste management activities;

(c) To enable the permittee to respond to sudden changes in the types or quantities of the wastes managed under the facility permit; or

(d) To facilitate other changes to protect human health and the environment.

d. A temporary authorization may be reissued for one additional term of up to 180 days provided that the permittee has requested a major permit modification for the activity covered in the temporary authorization, and the director determines that the reissued temporary authorization involving a major permit modification request is warranted to allow the authorized activities to continue while the modification procedures of subdivision 3 of this subsection are conducted.

5. The director's decision to grant or deny a permit modification request under subdivision of this subsection may be appealed under the case decision provisions of the Virginia Administrative Process Act (§ 2.2-4000 et seq. of the Code of Virginia).

6. Newly defined or identified wastes. The permitted facility is authorized to continue to manage wastes defined or identified as solid waste under 9VAC20-81-95 if:

a. It was in existence as a solid waste management facility with respect to the newly defined or identified solid waste on the effective date of the final rule defining or identifying the waste; and

b. It is in compliance with the standards of Part III (9VAC20-81-100 et seq.), Part IV (9VAC 20-81-300 et seq.), or Part VIII (9VAC20-81-800 et seq.) of this chapter, as applicable, with respect to the new waste, submits a minor modification request on or before the date on which the waste becomes subject to the new requirements; or

c. It is not in compliance with the standards of Part III (9VAC 20-81-100 et seq.), Part IV (9VAC 20-81-300 et seq.), or Part VIII (9VAC20-81-800 et seq.) of this chapter, as applicable, with respect to the new waste, also submits a complete permit modification request within 180 days after the effective date of the definition or identifying the waste.

7. Research, development and demonstration plans. Research, development and demonstration (RDD) plans may be submitted for sanitary landfills that meet the applicability requirements. These plans shall be submitted as a major permit modification application for existing sanitary landfills or as a part of the Part B application for new sanitary landfills.

a. Applicability.

(1) RDD shall be restricted to permitted sanitary landfills designed with a composite liner system, as required by 9VAC20-81-130 ~~¶~~ K 1. The effectiveness of the liner system and leachate collection system shall be demonstrated in the plan and shall be assessed at the end of the testing period in order to compare the effectiveness of the systems to the start of the RDD testing period.

(2) Operating permitted sanitary landfills that have exceeded groundwater protection standards at statistically significant levels in accordance with 9VAC20-81-250 B, from any waste unit on site shall have implemented a remedy in accordance with 9VAC20-81-260 C prior to the RDD plan submittal. Operating permitted sanitary landfills that have an exceedance in the concentration of methane gas migrating from the landfill in accordance with 9VAC20-81-200 shall have a gas control system in place per 9VAC20-81-200 ~~B~~ C prior to the RDD plan submittal.

(3) An owner or operator of a sanitary landfill that disposes of 20 tons of municipal solid waste per day or less, based on annual average, may not apply for a modification to include a an RDD plan.

(4) The sanitary landfill shall have a leachate collection system designed and constructed to maintain less than a 30 cm depth of leachate on the liner.

b. Requirements.

(1) RDD ~~Plans~~ plans may be submitted for activities such as:

(a) The addition of liquids in addition to leachate and gas condensate from the same landfill for accelerated decomposition of the waste mass;

- (b) Allowing run-on water to flow into the landfill waste mass;
  - (c) Allowing testing of the construction and infiltration performance of alternative final cover systems; and
  - (d) For other measures to be taken to enhance stabilization of the waste mass.
- (2) No landfill owner or operator may continue to implement an RDD plan beyond any time limit placed in the initial plan approval or any renewal without issuance of written prior approval by the department. Justification for renewals shall be based upon information in annual and final reports as well as research and findings in technical literature.
- (3) RDD plans may not include changes to the approved design and construction of subgrade preparation, liner system, leachate collection and removal systems, final cover system, gas and leachate systems outside the limits of waste, ~~run-off~~ runoff controls, run-on controls, or environmental monitoring systems exterior to the waste mass.
- (4) Implementation of an approved RDD plan shall comply with the specific conditions of the RDD Plan as approved in the permit for the initial testing period and any renewal.
- (5) Structures and features exterior to the waste mass or waste final grades shall be removed at the end of the testing period, unless otherwise approved by the department in writing.
- (6) The RDD plan may propose an alternate final cover installation schedule.
- c. An RDD plan shall include the following details and specifications. Processes other than adding liquids to the waste mass and leachate recirculation may be practiced in conjunction with the RDD plan.
- (1) Initial applications for RDD plans shall be submitted for review and approval prior to the initiation of the process to be tested. These plans shall specify the process that will be tested, describe preparation and operation of the process, describe waste types and characteristics that the process will affect, describe desired changes and end points that the process is intended to achieve, define testing methods and observations of the process or waste mass that are necessary to assess effectiveness of the process, and include technical literature references and research that support use of the process. The plans shall specify the time period for which the process will be tested. The plans shall specify the additional information, operating experience, data generation, or technical developments that the process to be tested is expected to generate.
- (2) The test period for the initial application shall be limited to a maximum of three years.
- (3) Renewals of testing periods shall be limited to a maximum of three years each. The maximum number of renewals shall be limited to three.
- (4) Renewals shall require department review and approval of reports of performance and progress on achievement of goals specified in the RDD plan.
- (5) RDD ~~Plans~~ plans for addition of liquids, in addition to leachate and gas condensate from the same landfill, for accelerated decomposition of the waste mass or for allowing run-on water to flow into the landfill waste mass shall demonstrate that there is no increased risk to human health and the environment. The following minimum performance criteria shall be demonstrated.
- (a) Risk of contamination to groundwater or surface water will not be greater than the risk without an approved RDD plan.
  - (b) Stability analysis demonstrating the physical stability of the landfill.
  - (c) Landfill gas collection and control in accordance with applicable Clean Air Act requirements (i.e., Title V, NSPS or EG rule, etc.).
  - (d) For RDD plans that include the addition of offsite nonhazardous waste liquids to the landfill, the following information shall be submitted with the RDD plan:
    - (i) Demonstration of adequate facility liquid storage volume to receive the offsite liquid;
    - (ii) A list of proposed characteristics for screening the accepted liquids is developed; and
    - (iii) The quantity and quality of the liquids are compatible with the RDD plan.
- If offsite nonhazardous liquids are certified by the offsite generator as stormwater uncontaminated by solid waste, screening is not required for this liquid.
- (6) RDD plans for testing of the construction and infiltration performance of alternative final cover systems shall demonstrate that there is no increased risk to human health and the environment. The proposed final cover system shall be as protective as the final cover system required by 9VAC20-81-160 ~~D~~ E. The following minimum performance criteria shall be demonstrated:
- (a) No build up of excess liquid in the waste and on the landfill liner;

- (b) Stability analysis demonstrating the physical stability of the landfill;
  - (c) No moisture will escape from the landfill to the surface water or groundwater; and
  - (d) Sufficient reduction in infiltration so that there will be no leakage of leachate from the landfill.
- (7) RDD plans that evaluate introduction of liquids in addition to leachate or gas condensate from the same landfill shall propose measures to be integrated with any approved leachate recirculation plan and compliance with requirements for leachate recirculation.
- (8) RDD plans shall include a description of warning symptoms and failure thresholds that will be used to initiate investigation, stand-by, termination, and changes to the process and any other landfill systems that might be affected by the process, such as gas extraction and leachate recirculation. Warning symptoms shall result in a reduction or suspension of liquids addition, leachate recirculation, investigation, and changes to be implemented before resuming the process being tested. Failure thresholds shall result in termination of the process being tested, investigation, and changes that will be submitted to the department for review and approval in writing prior to resumption of the process being tested.
- (9) RDD plans shall include an assessment of the manner in which the process to be tested might alter the impact that the landfill may have on human health or environmental quality. The assessment shall include both beneficial and deleterious effects that could result from the process.
- (10) RDD plans shall include a geotechnical stability analysis of the waste mass and an assessment of the changes that the implementation of the plan is expected to achieve. The geotechnical stability analysis and assessment shall be repeated at the end of testing period, with alteration as needed to include parameters and parameter values derived from field measurements. The plan shall define relevant parameters and techniques for field measurement.
- (11) RDD plans shall propose monitoring parameters, frequencies, test methods, instrumentation, recordkeeping and reporting to the department for purposes of tracking and verifying goals of the process selected for testing.
- (12) RDD plans shall propose monitoring techniques and instrumentation for potential movements of waste mass and settlement of waste mass, including proposed time intervals and instrumentation, pertinent to the process selected for testing.
- (13) RDD plans shall propose construction documentation, construction quality control and construction quality assurance measures, and recordkeeping for construction and equipment installation that is part of the process selected for testing.
- (14) RDD plans shall propose operating practices and controls, staffing, monitoring parameters, and equipment needed to support operations of the process selected for testing.
- (15) RDD plans that include aeration of the waste mass shall include a temperature monitoring plan, a fire drill and safety program, instructions for use of liquids for control of temperature and fires in the waste mass, and instructions for investigation and repair of damage to the liner and leachate collection system.
- (16) RDD plans may include an alternate interim cover system and final cover installation schedule. The interim cover system shall be designed to account for weather conditions, slope stability, and leachate and gas generation. The interim cover shall also control, at a minimum, disease vectors, fires, odors, blowing litter, and scavenging.
- d. Reporting. An annual report shall be prepared for each year of the RDD testing period, including any renewal periods, and a final report shall be prepared for the end of the testing period. These reports shall assess the attainment of goals proposed for the process selected for testing, recommend changes, recommend further work, and summarize problems and their resolution. Reports shall include a summary of all monitoring data, testing data and observations of process or effects and shall include recommendations for continuance or termination of the process selected for testing. Annual reports shall be submitted to the department within three months after the anniversary date of the approved permit or permit modification. Final reports shall be submitted at least 90 days prior to the end of the testing period for evaluation by the department. The department shall review this report within 90 days. If the department's evaluation indicates that the goals of the project have been met, are reliable and predictable, the department will provide a minor permit modification to incorporate the continued operation of the project with the appropriate monitoring.
- e. Termination. The department may require modifications to or immediate termination of the RDD process being tested if any of the following conditions occur:
- (1) Significant and persistent odors;

- (2) Significant leachate seeps or surface exposure of leachate;
- (3) Significant leachate head on the liner;
- (4) Excessively acidic leachate chemistry or gas production rates or other monitoring data indicate poor waste decomposition conditions;
- (5) Instability in the waste mass; or
- (6) Other persistent and deleterious effects.

The RDD program is an optional participation program, by accepting the modification or new permit, the applicant acknowledges that the program is optional; and that they are aware the department may provide suspension or termination of the RDD program for any reasonable cause, without a public hearing. Notice of suspension or termination will be by letter for a cause related to a technical problem, nuisance problem, or for protection of human health or the environment as determined by the department.

G. Facility siting. The suitability of the facility location will not be considered at the time of permit modification unless new information or standards indicate that an endangerment to human health or the environment exists which was unknown at the time of permit issuance or the modification is for an expansion or increase in capacity.

#### **9VAC20-81-620. Asbestos-containing waste materials.**

A. Applicability. The additional standards contained in this section apply to the management of all asbestos-containing waste materials (ACM) generated by asbestos mills, by manufacturing, fabricating, and spraying operations, and Regulated Asbestos Containing Material (RACM) as defined by 40 CFR Part 61, Subpart M, as amended, generated in the course of demolition and renovation of installations, structures or buildings, or other waste-generating activities. These requirements do not apply to naturally occurring asbestos. All definitions included in 40 CFR Part 61, Subpart M, as amended, are hereby by included by reference.

B. Waste preparation for disposal. In order for asbestos-containing waste materials to be accepted at the disposal site, these materials shall meet the transporting and packaging requirements, including adequate wetting, sealing in leak-tight containers or leak-tight packaging, and labeling, for asbestos-containing waste materials according to 40 CFR Part 61, Subpart M, as amended, which is hereby incorporated.

C. Disposal of asbestos-containing waste materials. Each owner or operator of a solid waste disposal facility that receives asbestos-containing waste materials shall dispose of these materials according to the requirements of 40 CFR Part 61, Subpart M, as amended, which is hereby incorporated. In addition to the requirements of 40 CFR Part 61, Subpart M, as amended, each owner or operator of a solid waste disposal facility that receives asbestos-containing waste materials shall meet the following requirements:

1. All asbestos-containing waste materials generated in a manufacturing, fabrication, or spraying operation and all RACM generated in a demolition or renovation operation shall be disposed in a special purpose landfill or in a designated area of a sanitary landfill. Category I and Category II nonfriable ACM may be disposed in a landfill providing daily soil cover, providing that the operator is notified and ~~other pertinent requirements of this part are met~~ the facility is authorized to receive the waste through specific provisions within the facility's permit or by specific special waste disposal approval under the provisions of 9VAC20-81-610 A.
2. ACM may be disposed in asbestos disposal cells or units located at existing disposal facilities above the natural ground level, provided they comply with all other appropriate regulatory requirements contained in Part III (9 VAC 20-81-100 et seq.) of this chapter.
3. All asbestos-containing waste materials generated in a manufacturing, fabrication, or spraying operation, all RACM generated in a demolition or renovation operation, and all Category I and Category II nonfriable ACM shall be covered immediately upon receipt, with at least six inches of compacted soil or other approved material, in a manner that prevents releases of asbestos into the air.
4. The facility shall maintain, until closure, records of the location, depth and area (including elevation and coordinates), and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area in accordance with the requirements of 40 CFR Part 61, Subpart M. Procedures shall be used to control emissions and prevent exposure if any asbestos-containing waste material that has been deposited and covered is excavated or otherwise disturbed.
5. The facility shall maintain asbestos waste shipment records in accordance with the requirements of 40 CFR Part 61, Subpart M.

D. Closure and ~~post-closure~~ post-closure care. In addition to the requirements contained in Part III (9VAC20-81-100 et seq.) of this chapter, the owner or operator of a solid waste disposal facility receiving

the asbestos-containing waste material shall, within 60 days of the closure of the site, record with the county clerk's office a notation on the deed to the facility property or any other document that would normally be examined during a title search that will in perpetuity notify any purchaser of the property that:

1. The property has been used for the disposal of asbestos-containing waste materials;
2. The copy of the survey plot and the record of location and quantity of asbestos-containing waste materials disposed are attached to the notation; and
3. The site is subject to regulation under 9VAC5-60-70.

**9VAC20-81-660. Soil contaminated with petroleum products.**

A. Applicability.

1. The specific requirements contained in this section apply to requests by the owner or operator to manage or dispose of petroleum- contaminated soil or absorbents, unless the facility's permit specifically allows disposal of the contaminated soil. Upon removal from the ground, the soil must be characterized and managed according to the appropriate regulations including 9VAC20-60 and 9VAC20-81.
2. Any contaminated soil from a state other than Virginia that is classified as a hazardous waste in the state of origin shall be managed as a hazardous waste. Such wastes are not acceptable for treatment, storage, or disposal at a solid waste management facility in the Commonwealth.
3. For purposes of this section "soil" shall include soil, sediment, dredge spoils, and other earthen material contaminated only by petroleum products.

B. Testing requirements.

1. Analytical methods. The facility shall use the appropriate EPA SW-846 method to determine the characteristics of the soil. The parameters that shall be investigated, include, ~~but are not limited to,~~ the following, as appropriate: RCRA hazardous waste characteristics (i.e., corrosivity, ignitability, reactivity, and toxicity); total metals; volatile organic compounds; semi-volatile compounds; total petroleum hydrocarbons (TPH), pesticides/herbicides; polychlorinated bi-phenyls (PCBs); presence of liquids; and ~~total organic halides (TOX)~~ extractable organic halides (EOX).
2. The department will determine, on a case-by-case basis, which tests are appropriate. Specific testing requirements may be waived if the department staff determines that the material was contaminated from a specific source such as chlorinated solvents from a drycleaner or petroleum products from an underground storage tank.
3. Sampling frequency. A minimum of one composite sample shall be analyzed for each required test for every 250 cubic yards of soil to be disposed. In the case of soil reclaimed by thermal treatment, a minimum of one sample shall be analyzed for every production day composited hourly. For quantities of soil greater than 2,500 cubic yards the sampling rates may be adjusted with the approval of the department.

C. Required information. Each generator must submit the following information to the department for review:

1. A statement from the generator certifying that the soil is nonhazardous waste as defined by the Virginia Hazardous Waste Management Regulations (9VAC20-60).
2. The amount of contaminated soil to be disposed.
3. A description of the sampling protocol and a copy of all applicable laboratory analyses.
4. If generated in a state other than Virginia, certification from the generator that the waste is not considered a hazardous waste in its state of generation.
5. The potential options for disposal of the material based upon the testing results, including, ~~but not limited to~~ disposal of a hazardous waste, disposal as a special waste, beneficial reuse as a fill material, or use as an alternate daily cover.

D. Disposal criteria.

1. Soils failing the TCLP test shall be managed in accordance with the Virginia Hazardous Waste Management Regulations (9VAC20-60).
2. Soils contaminated solely with petroleum related products including BTEX, ~~TOX~~, EOX, or TPH shall be handled as follows:
  - a. Soils exhibiting greater than 100 milligram per kilogram (mg/kg) of ~~TOX~~ EOX may not be disposed until separate approval from the department is granted. This request shall document the cause for the high ~~TOX~~ EOX level.
  - b. If the concentration of total BTEX is greater than 10 mg/kg or TPH is greater than 500 mg/kg, the soil cannot be disposed of in any landfill unless the facility permit expressly allows such disposal.

c. If the concentration of TPH is greater than 50 mg/kg and less than 500 mg/kg and total BTEX is less than 10 mg/kg, the disposal of the contaminated soil may be approved for permitted landfills equipped with liners and leachate collection systems.

d. Soil containing less than 50 mg/kg TPH and total BTEX less than 10 mg/kg may be used as fill material. This soil, however, may not be disposed of closer than 100 feet of any regularly flowing surface water body or river, 500 feet of any well, spring or other groundwater source of drinking water, and 200 feet from any residence, school, hospital, nursing home, or recreational park area. In addition, if the soil is not to be disposed of on the generator's property, the generator shall notify the property owner that the soil is contaminated and with what it is contaminated.

3. Soil contaminated with compounds other than petroleum and that is not hazardous waste shall be disposed of according to the criteria approved by the department.

#### E. Exemptions.

1. Contaminated soil resulting from a petroleum storage tank release or from a spill qualifies for an exemption from the limits and/or testing specified in subdivisions D 2 a, b, and c of this section where the total volume of contaminated soil from a cleanup site is less than 20 cubic yards, and the contaminated soil is not a hazardous waste.

2. The department may approve the disposal of contaminated soil resulting from an emergency cleanup of a spill of petroleum products, provided that the waste is not hazardous.

3. Soil contaminated with petroleum products resulting from ordinary household functions may be disposed with the general household waste.

#### FORMS (9VAC20-81)

[Annual Report QA/QC Submission Checklist, DEQ Form ARSC-01 \(rev. 7/2011\)](#)

[Solid Waste Management Facility Permit Applicant's Disclosure Statement, DEQ Form DISC-01 \(rev. 9/2020\)](#)

[Solid Waste Management Facility Permit Applicant - Key Personnel Disclosure Statement, DEQ Form DISC-02 \(rev. 9/2020\)](#)

[Solid Waste Management Facility Disclosure Statement - Quarterly Update, DEQ Form DISC-03 \(rev. 9/2020\)](#)

[Request for Certification \(Local Government\), DEQ Form SW-11-1 \(rev. 6/2016\)](#)

[Special Waste Disposal Request, DEQ Form SWDR \(rev. 8/2018\)](#)

[Solid Waste Part A Application, DEQ Form SW PTA \(rev. 3/2011\)](#)

[Solid Waste Disposal Facility Part B Application, DEQ Form SW PTB \(rev. 3/2011\)](#)

[Solid Waste Information and Assessment Program Reporting Table, Form DEQ 50-25 with Statement of Economic Benefits Form and Instructions \(rev. 12/2018\)](#)

[Exempt Yard Waste Composting Annual Report, DEQ Form YW-2 \(rev. 7/2011\)](#)

[Exempt Yard Waste Compost Facility - Notice of Intent and Certification, DEQ Form YW-3 \(rev. 7/2011\)](#)

[Exempt Yard Waste & Herbivorous Manures Compost Facility - Notice of Intent and Certification, DEQ Form YW-4 \(rev. 7/2011\)](#)

[Host Agreement Certification Request, SW-11-2, \(rev. 8/2018\)](#)

#### Documents Incorporated by Reference (9VAC20-120)

[A Subtitle D Landfill Application Manual for the Multimedia Exposure Assessment Model \(Multimed 2.0\), EPA, 04/1995](#)

[Leachate Generation and Migration at Subtitle D Facilities-Summary and Review of Processes and Mathematical Models, EPA, \(08/1993\)](#)