



**APPLICATION
REVIEW SUMMARY**

New Hampshire Department of Environmental Services
Waste Management Division, Solid Waste Management Bureau
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Facility	NCES Landfill	Reviewed by	Jaime M. Colby, P.E.	
Location	581 Trudeau Road, Bethlehem, NH	Checked by	Pamela Hoyt-Denison, P.E.	
Permit No.	DES-SW-SP-03-002	Review Date	Completed October 9, 2020	
Application	Type I-A Modification – Landfill Expansion (Stage VI resubmittal)	Application No.	2020-47865	Page 1 of 48

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PROJECT DESCRIPTION

North Country Environmental Services, Inc. (NCES) owns and operates a solid waste landfill (Landfill) of the same name located at 581 Trudeau Road in Bethlehem, NH. The Landfill is a commercial facility with an unlimited service area, and is regulated under Solid Waste Permit No. DES-SW-SP-03-002. NCES submitted an application in March 2020 to modify Permit No. DES-SW-SP-03-002 to authorize an expansion of the Landfill, referred to as “Stage VI”. This is a resubmittal of Application No. 2019-36785 for expansion into the same footprint (that application was withdrawn by NCES in February 2020). In the resubmitted application, NCES requested the following modifications:

- Increase landfill footprint by 5.71 acres (Phase I, aka Stage VI-South: 3.35 acres; and Phase II, aka Stage VI-East: 2.36 acres);
- Increase landfill approved design volume by 1.241 million cubic yards;
- Increase landfill “life through 2026 filling at an average rate of 175,000 tons per year”¹;
- Addition of two abutting properties owned by NCES to the regulated Facility; and
- Final approval of the construction-level plans and technical specifications for Stage VI Phase I (3.35 acres).

Proposed activities in the permit application required to accommodate the expansion include:

- Relocating the facility access road, certain monitoring points, and other associated infrastructure;
- Constructing earthen berms/embankments to support the waste containment system;
- Removing the final cap installed on the eastern slope and the temporary HDPE cover installed on the southern slope of the existing facility;
- Excavating areas of waste (up to approximately 28 feet deep) to allow connection of new leachate collection, liner, and landfill gas systems to existing systems;
- Constructing additional geomembrane liner systems; and
- Constructing additional stormwater, leachate and landfill gas infrastructure.

NHDES reviewed the application to determine whether the proposed activity meets all applicable criteria for issuance of a permit modification as specified in the New Hampshire Solid Waste Rules (the Rules, Env-Sw 100 et seq.), in effect on the date of the final decision on the application. The results of the review are summarized herein, on a rule by rule basis. The reader can obtain a copy of the cited rules from the NH Office of Legislative Services (see <http://gencourt.state.nh.us/rules/default.htm>).

NHDES is approving the application, with conditions. NHDES notes that portions of the approved expansion (Stage VI, Phase II) are based upon preliminary plans (e.g., design drawings) and, as stated in this review, NHDES is requiring specific additional information be included in the various subsequent application(s) required by the NH Solid Waste Rules, Env-Sw 100 et seq., (Rules) for obtaining approval of final plans.

Submittals

- North Country Environmental Services, Inc. (17 March 2020). *Application for a Type I-A Modification to a Solid Waste Management Facility Permit (Parts 1 and 2)*. Received March 24, 2020. Assigned WMD Log No. 2020-47865-01.
- North Country Environmental Services, Inc. (3 April 2020). *Application for a Type I-A Modification – Replacement Page to Operating Plan and Stamped Cross-section Drawings (S-1 and S-2)*. Received April 3, 2020. Assigned WMD Log No. 2020-47865-02.
- CMA Engineers, Inc. (6 April 2020). *Application for a Type I-A Modification – Notification Letters (Ammonoosuc*

¹ See Application, Part 1, PDF p. 21 (WMD Log No. 2020-47865-01). See herein Attachment A, *Public Benefit Determination*, for further discussion.

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River LAC and NHDES Rivers Coordinator). Received April 6, 2020. Assigned WMD Log No. 2020-47865-03.

- CMA Engineers, Inc. (6 May 2020). *Application for a Type I-A Modification – Certified Mail Receipts*. Received May 6, 2020. Assigned WMD Log No. 2020-47865-04.
- North Country Environmental Services, Inc. (7 May 2020). *Application for a Type I-A Modification – Revised Tables for Public Benefit Demonstration (Tables 5 and 6, as well as associated text)*. Received May 8, 2020. Assigned WMD Log No. 2020-47865-05.
- North Country Environmental Services, Inc. (26 May 2020). *Application for Type I-A Modification – Certified Mail Receipts for Revised Public Benefit Section and Ammonoosuc River LAC*. Received May 26, 2020. Assigned WMD Log No. 2020-47865-06.

On April 22, 2020, NHDES received confirmation from NH Department of Justice (NHDOJ) that it received the business and personal disclosure forms required to perform a background investigation pursuant to Env-Sw 316.

On July 6, 2020, NHDES notified the applicant that the application was complete in accordance with Env-Sw 304.03, *Application Completeness Determination*.

FACILITY DESCRIPTION

NCES owns and operates the NCES Landfill (Landfill) in Bethlehem, NH. The Landfill is located on Trudeau Road in Bethlehem, accessed from Route 3 to the south or Route 302 to the north. The Landfill is located about 800 feet from the nearest residence not owned by NCES. The Landfill is located on relatively flat ground that slopes downward to the west and Trudeau Road, and downward to the north and the Ammonoosuc River.

The existing built Landfill is approximately 47 acres, and is comprised of five stages. The Landfill is classified as a non-hazardous, municipal solid waste, double-lined landfill, with an unlimited service area (i.e., commercial landfill). Leachate is collected in sumps located on the liner system, pumped up to on-site leachate storage tanks, and trucked to wastewater treatment facilities. The Landfill has an active (i.e., mechanically operated) decomposition/landfill gas management system that directs gas to an on-site flare for destruction. Groundwater monitoring wells and decomposition gas probes are located outside the landfill footprint to monitor subsurface conditions.

FACILITY HISTORY

In 1976, state and local approval were granted for an unlined landfill located off of Muchmore Road (to the north of the current Landfill) in Bethlehem, NH. In 1987, a double-lined landfill known as Stage I was constructed on the same property. As part of a later approval for expansion into Stage II, the unlined landfill was excavated and placed within the double-lined Stage II landfill. Relocation of waste from the unlined landfill was completed in October 1993 resulting in removal of the unlined landfill. Over time, the double-lined landfill expanded to include Stages I through V. As of the date of this review, active operations are occurring in Stages I through V.

PERMIT HISTORY

An unlined landfill off of Muchmore Road was permitted by letter approval in 1976, and subsequently issued Solid Waste Permit No. DES-SW-TP-94-018 on April 8, 1994 for the sole purpose of tracking reclamation of the unlined landfill. When removal of the unlined landfill was completed in 1993, the temporary solid waste permit effectively terminated.

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Commencing in 1987, multiple solid waste permits and permit modifications have been issued over time for the existing lined NCES landfill.

Stages I through IV of the double-lined landfill were each assigned a new permit number upon approval as follows:

- Stage I: Permit No. DES-SW-87-022
- Stage II: Permit No. DES-SW-89-009
- Stage III: Permit No. DES-SW-SP-00-003
- Stage IV: Permit No. DES-SW-SP-03-002

On August 15, 2014 with the approval of Stage V, NHDES administratively merged the previously issued permit numbers, and all activities at the Landfill are now administratively managed under Solid Waste Permit No. DES-SW-SP-03-002. Refer to the facility permit file for additional information.

COMPLIANCE STATUS

The applicant signed and submitted as part of the application, a compliance statement pursuant to Env-Sw 303.14, certifying to certain performance history criteria. See also review of Env-Sw 316 herein.

PUBLIC HEARING AND COMMENT PROCESS

In accordance with the requirements of the Solid Waste Rules, specifically Env-Sw 303, *Filing Requirements for Applications, Registrations, and Reports*, and Env-Sw 304, *Application Review*, as well as the NH Solid Waste Management Act, specifically RSA 149-M:9,VIII, RSA 149-M:11,IV(a) and RSA 149-M:12,III, NHDES scheduled, noticed, and held a public hearing on the application for expansion as described below.

After NHDES deemed the application complete, NCES and NHDES coordinated the date, time, and location of the public hearing. NHDES' regulatory obligation with regard to notification of a public hearing is described in Env-Sw 304.08, *Public Hearing*, and NHDES took the following actions to fulfill its obligation:

- NHDES prepared and NCES paid for publication of the notice of public hearing in a newspaper of general circulation in the host municipality and host solid waste management district. Specifically, notice was published in the *Littleton Courier* on July 19, 2020 and the *Caledonian Record Weekender* on July 25, 2020.
- NHDES provided in writing sent by first-class mail the notice of public hearing to the applicant, host municipality, host solid waste management district and other affected entities (as identified pursuant to Env-Sw 303.08 through Env-Sw 303.12), excluding abutters (who received their notice from NCES).

NCES' regulatory obligation for providing notice of the public hearing is also described in Env-Sw 304.08, *Public Hearing*. As required by that rule, NCES notified abutters to the facility of the date, time, and location of the public hearing.

Notifications by NHDES and NCES were made at least 30 days in advance of the public hearing, according to standard practice of NHDES' Solid Waste Management Bureau (SWMB).

NHDES also made notice as follows:

- Posted the notice electronically on the NHDES website;
- Emailed a brief description and link to the notice directly to certified solid waste operators on July 30, 2020; and
- Provided a brief description and link to the notice in NHDES' Municipal EcoLink e-bulletin sent July 31, 2020.

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On August 24, 2020, in preparation for holding the public hearing online, NHDES provided additional information regarding access to and conduct of the public hearing via a frequently asked questions (FAQ) document posted to the NHDES website and linked to postings on facebook and twitter, and sent via email to solid waste facility permittees, known solid waste consultants, and certified solid waste operators. Further, people who registered in advance to attend the hearing via GoToWebinar were provided a link to the FAQ document in automatically generated reminder emails.

NHDES and NCES fulfilled their notification obligations in accordance with Env-Sw 304.08.

Due to the State of Emergency declared by the Governor as a result of the COVID-19 pandemic and in accordance with the Governor's Emergency Order #12 pursuant to Executive Order 2020-04, as extended, NHDES conducted the hearing electronically via the GoToWebinar platform. To assist individuals without reliable internet access, NHDES also provided established an in-person gathering place staffed by NHDES, with remote access through a shared communications portal at the Elks Lodge in the host municipality of Bethlehem, NH, to accept in-person oral and written testimony. The public hearing was held on August 25, 2020. About a dozen persons attended the hearing at the Bethlehem gathering place and over 40 persons attended remotely.

At the request of a commenter during the public hearing, the Hearing Officer extended the public comment period to September 18, 2020. NHDES provided notification of the extended comment period as follows:

- Posted the notice of extension electronically on the NHDES website;
- Emailed a brief description and link to the notice of extension directly to the applicant, host municipality, host solid waste management district, affected entities, public hearing registrants and attendees that provided an email address, commenters-to-date that provided an email address, solid waste facility permittees and known solid waste consultants on August 28, 2020;
- Provided a brief description and link to the notice of extension in NHDES' Municipal EcoLink e-bulletin sent August 31, 2020;
- Sent a copy of the notice of extension via first class mail on September 1, 2020 to facility abutters, the host municipality, affected entities without an email address on record with NHDES, and hearing attendees that only provided mailing addresses;
- Posted a brief description and link to the notice of extension on facebook and twitter on September 8, 2020; and
- Emailed a brief description and link to the notice of extension directly to certified solid waste operators (with a periodically issued training update) on September 11, 2020.

The public comment period closed on September 18, 2020 at 4 pm. NHDES considered all comments received during the public hearing and comment period in making its decision. See NHDES' concurrently issued Response to Public Comments.

TECHNICAL REVIEW NOTES

NHDES reviewed the information provided in the application to determine if the proposed landfill expansion met the applicable requirements of the NH Solid Waste Rules, Env-Sw 100 et seq. The notes provided in this section document the review, on a rule by rule basis. The notes identify whether the cited rule is applicable and, if applicable, whether or not information provided in the application satisfied the requirement of the rule. If a rule relates to an existing feature or activity already approved at the existing facility and for which NCES did not propose a change, NHDES did not undertake an evaluation of the application relative to the particular rule. Likewise, where the subject of a rule requires

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no evaluation, none was undertaken.

General note regarding construction and operating requirements: NHDES reviewed the application to determine whether the proposed measures are likely to satisfy the construction and operating requirements in the Rules. Actual compliance with construction and operating requirements can only be determined through a compliance assessment when the actual construction and operation activities are implemented. Even if NHDES has determined that the proposed measures are likely to satisfy rule requirements, additional or different measures may be necessary to maintain compliance depending on actual conditions.

Env-Sw 300 SOLID WASTE PROGRAM: PERMITS

Env-Sw 304 APPLICATION REVIEW

Env-Sw 304.07 Technical Review

- 304.07(a) – Applicable – Undertaken.
- 304.07(b) – Applicable – Undertaken.
- 304.07(c) – Not applicable

Env-Sw 315 PERMIT MODIFICATION

Env-Sw 315.01 Applicability

- 315.01(a) – Applicable – Applicant is requesting modification to an existing facility permit that does not meet the exemption criteria in Env-Sw 315.01(b); therefore, this part applies.

Env-Sw 315.02 Definitions

- 315.02(a) – Applicable – Applicant is requesting a change that is not a Type II through Type V modification.
- 315.02(b)(1) – Applicable – Applicant is requesting an increase in the approved design capacity; therefore, the request/application by definition is classified as a Type I-A permit modification. The applicant has satisfied the requirement for selecting the proper submittal type.
- 315.02(c) through (g) – Not applicable

Env-Sw 315.03 Approval Required

- 315.03(a) – Applicable – Permittee must have written approval from NHDES to implement the change.
- 315.03(b)(1) – Applicable – See review of Env-Sw 315.05 herein.
- 315.03(b)(2) through (5) – Not applicable

Env-Sw 315.04 Permit Modification Application Filing Procedures

- 315.04(a) – Applicable – Satisfies requirement.
- 315.04(b) and (c) – Not applicable

Env-Sw 315.05 Application Content and Format, Type I Modifications

- 315.05(a) – Applicable – Required information submitted.
- 315.05(b) – Applicable – Required information submitted.
- 315.05(c)(1) – Applicable – Required information submitted.
- 315.05(c)(2) – Applicable – Required information submitted.
- 315.05(c)(3) – Applicable – Required information submitted.
- 315.05(c)(4) – Applicable – Required information submitted.
- 315.05(c)(5) – Applicable – Required information submitted. Assessment to follow herein.
- 315.05(d) – Applicable – Required information submitted.
- 315.05(e) – Applicable – Required information submitted.
- 315.05(f) – Applicable – Required information submitted. Assessment to follow herein.
- 315.05(g) – Applicable – Signed compliance certification statement. Required information submitted.

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- 315.05(h) – Applicable – See review of Env-Sw 316 herein. Required information submitted.
- 315.05(i) – Applicable – Required information submitted. See evaluation in Attachment A herein.
- 315.05(j) – Applicable – Information provided for advisory purposes. No evaluation undertaken.
- 315.05(k) – Applicable – Required information submitted.
- 315.05(l) – Applicable – Required information submitted.

Env-Sw 316 PERFORMANCE HISTORY REQUIREMENTS

Env-Sw 316.01 Purpose

- 316.01 – Purpose Statement. No evaluation undertaken.

Env-Sw 316.02 Applicability

- 316.02(a) – Applicable – The Rules in Part Env-Sw 316 apply to the applicant because the application is for a Type I-A modification and the applicant is a not exempted pursuant to Env-Sw 316.02(b).
- 316.02(b) – Not applicable

Env-Sw 316.03 Disclosure Required

- 316.03 – Applicable – Applicant did not provide confirmation to NHDES that NHDOJ was provided the required information. Upon NHDES inquiry on April 22, 2020, NHDOJ confirmed receipt of required information. No further evaluation undertaken.

Env-Sw 316.04 Use of Disclosure Forms: Signatures

- 316.04 – Applicable – See notation at Env-Sw 316.03 above. NHDES has no knowledge that the applicant did not provide the necessary information in the format required, or that the applicant did not cooperate with the NHDOJ. No further evaluation undertaken.

Env-Sw 316.05 Entities and Individuals Required to Submit Information

- 316.05(a) – Not applicable
- 316.05(b)(1) – Applicable – The applicant is a corporation; therefore, background investigation forms are required for:
 - (1)a. The applicant, North Country Environmental Services, Inc.
 - (1)b.1. Not applicable
 - (1)b.2. Not applicable
 - (1)b.3. Entities holding 10% or more of applicant’s debt
 - (1)b.4. Entities holding 10% or more of applicant’s equity
 - (1)c. The applicant’s parent corporation, New England Waste Services, Inc., and its ultimate parent corporation, Casella Waste Systems, Inc.
- 316.05(b)(2) – Applicable – NH Secretary of State lists the following as principals of North Country Environmental Services, Inc.: John W. Casella, Douglas R. Casella. NHDES has also identified Kevin Roy as a key employee with management or supervisory or substantial decision-making authority and responsibility. The applicant also submitted the BDF and PDF for Edmond R. Coletta, Jr., and Edwin Johnson; and, thus, these individuals were included in the background investigation.
- 316.05(c) – Not applicable

Env-Sw 316.06 Scope of Disclosures

- 316.06 – Applicable – NHDOJ confirmed receipt of the required completed disclosure forms. No further evaluation undertaken.

Env-Sw 316.07 Filing of Disclosure Forms

- 316.07 – Applicable – See notation at Env-Sw 316.03. No further evaluation undertaken.

Env-Sw 316.08 Background Investigation Fee

- 316.08 – Applicable – NHDES has no knowledge that the applicant has not, or will not, pay the required fee. No

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further evaluation undertaken.

Env-Sw 800 LANDFILL REQUIREMENTS

Env-Sw 801 APPLICABILITY

Env-Sw 801.01 Applicability

- 801.01 – Applicable – The landfill is subject to rules in Chapter Env-Sw 800.

Env-Sw 802 PERMITTING REQUIREMENTS

Env-Sw 802.01 Permit Required

- 802.01 – Applicable – The facility is not permit-exempt pursuant to Env-Sw 302; therefore, a permit is required.

Env-Sw 802.02 Permit Application Requirements

- 802.02 – Not applicable – The landfill is already permitted.

Env-Sw 803 FEDERAL REQUIREMENTS FOR MSW LANDFILLS

Env-Sw 803.01 Purpose

- 803.01 – Purpose Statement. No evaluation required.

Env-Sw 803.02 Applicability

- 803.02 – Applicability Statement relative to Env-Sw 803.03 and Env-Sw 803.04. No evaluation undertaken.

Env-Sw 803.03 Applicability of Federal Law

- 803.03(a) – Exemption is not applicable – Facility is currently operating.
- 803.03(b) – Exemption is not applicable – Facility is currently operating.
- 803.03(c) – Facility is currently operating and receives greater than 100 tpd of waste; therefore, the landfill is subject to all requirements of 40 CFR 258. See also notation at Env-Sw 803.04(a) and Notice of Final Determination of Full Program Adequacy for the State of New Hampshire’s Municipal Solid Waste Landfill Permitting Program, published in Federal Register Volume 60, No. 30, February 14, 1995(*).
- 803.03(d) – Exemption is not applicable – Facility is currently operating.
- 803.03(e) – Facility is currently operating and receives greater than 100 tpd of waste; therefore, the landfill is subject to all of the requirements of 40 CFR 258.
- 803.03(f) – Applicable – Definitions specified in 40 CFR 258 are applicable.

Env-Sw 803.04 Standards Specific to MSWLFs Subject to 40 CFR 258

- 803.04(a) – Applicable – 40 CFR 258 applies; as do Env-Sw 900, Env-Sw 1000, Env-Sw 1100, Env-Sw 1400, Env-Sw 1600, and this chapter.
- 803.04(b) – Applicable – Applicant has not requested a waiver to any 40 CFR 258 requirements. Satisfies requirement,

(*) In 1995, the U.S. Environmental Protection Agency (EPA) determined that all portions of New Hampshire’s Municipal Solid Waste Landfill (MSWLF) permit program are adequate to assure compliance with Federal MSWLF criteria (RCRA Subtitle D; 40 CFR 258). Thus, the technical review of the requirements in 40 CFR 258 is covered by the technical review presented below for the comparable state rules.

Env-Sw 804 SITING REQUIREMENTS

Env-Sw 804.01 Applicability

- 804.01(a) – Applicable – The proposed expansion beyond the existing footprint is classified, per Env-Sw 103.48, as a “new facility”. The landfill siting requirements in Part Env-Sw 804 apply to the proposed “new facility” area because it is not one of the exceptions listed in Env-Sw 804.01(a)(1)-(4).

Env-Sw 804.02 Groundwater Protection Standards

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- 804.02(a) – Applicable – Expansion not proposed in a wellhead protection area. Satisfies requirement.
- 804.02(b) – Applicable – See Design Report and Hydrogeological Report. Permittee holds groundwater release detection permit GWP #198704033, which requires modification to relocate certain monitoring wells prior to constructing Stage VI, Phase II. Env-Sw 305.04(b) ensures compliance therewith. Satisfies requirement.
- 804.02(c) – Applicable – Hydrogeological report provided. See also review of Env-Sw 804.02(a) and (b) herein. Satisfies requirement.
- 804.02(d) – Applicable – See Design Report, including Figure 3, *Stage VI Separation to Groundwater*. Groundwater separation is estimated to be equal to or greater than 52 feet for Stage VI. Bedrock separation is estimated to be equal to or greater than 100 feet. Satisfies requirement.

Env-Sw 804.03 Surface Water Protection Standards

- 804.03(a) – Applicable – Alteration of Terrain permit required; application submitted; see Design Report and application information submitted pursuant to Env-Sw 315.05(j). GWP #198704033 requires surface water sampling at select locations. See also RSA 485-A:15,I. Satisfies requirement.
- 804.03(b) – Applicable – See note at Env-Sw 804.02(b) above. Satisfies requirement.
- 804.03(c) – Applicable – Satisfies requirement.
- 804.03(d) – Applicable – Satisfies requirement.
- 804.03(e) – Applicable – Satisfies requirement.
- 804.03(f) – Applicable – Satisfies requirement.
- 804.03(g) – Applicable – Satisfies requirement.

Env-Sw 804.04 Set-back Requirements

- 804.04(a) – Applicable – Applicant proposes to meet setback requirements by expanding regulated facility boundary to include Tax Map 419 Lots 24 and 25, now owned by NCES. Application includes a survey plot plan stamped by a licensed surveyor (Andrew Nadeau, NH PLS #947, exp. 6/30/2021) showing proposed landfill footprint relative to Town of Bethlehem tax map parcels proposed to be included in the regulated solid waste facility boundary. Pursuant to prior approvals, NHDES notes that Tax Map 419 Lots 1, 2, 21, and 22 are also part of the regulated facility. Based on a review of the application and prior approvals, Tax Map 419, Lots 1, 2, 21, 22, 24 and 25 are locations where solid waste operations occur, are proposed to occur, and/or are necessary to maintain regulatory setbacks from the existing and proposed landfill footprint to the facility property line. NHDES notes that the existing landfill footprint and the proposed Stage VI footprint are only located on Tax Map 419, Lot 22. Satisfies requirement.

For clarity, the permit identifies the regulated solid waste facility as being comprised of Bethlehem Tax Map 419, Lots 1, 2, 21, 22, 24 and 25, establishes the outer boundaries of those lots as the compliance boundary for requirements in the Rules that refer to “property line” or “property boundary.”

Further, to ensure the footprint of the landfill is maintained on Tax Map 419 Lot 22, as depicted and described in the application, the permit requires a qualified third-party surveyor to periodically survey the anchor trench alignment and proximate topography, and report the results of the survey compared to the approved footprint.

- 804.04(b) – Applicable – Satisfies requirement.
- 804.04(c) – Applicable – Satisfies requirement.
- 804.04(d) – Not applicable.
- 804.04(e) – Applicable – Satisfies requirement.

Env-Sw 804.05 Geologic Siting Limitations

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- 804.05(a) – Applicable – See Design Report and Hydrogeologic Report, specifically Appendix B thereof. Satisfies requirement.
- 804.05(b) – Applicable – See Design Report and Hydrogeologic Report, specifically Appendix B thereof. Satisfies requirement.

Env-Sw 804.06 Other Siting Limitations

- 804.06 – Applicable – See Design Report. See also Env-Sw 804.04 above. Satisfies requirement.

Env-Sw 805 DESIGN AND CONSTRUCTION REQUIREMENTS

Env-Sw 805.01 Applicability

- 805.01 – Applicable – The design requirements of this part apply to the landfill; Parts Env-Sw 1004, Env-Sw 1103, and Env-Sw 900 apply as a complement.

Env-Sw 805.02 General Landfill Design Requirements

- 805.02(a) – Applicable – See review of Env-Sw 805.03, 805.05, 805.07, 805.09, 805.10, and 806.07 herein. Requirement to have a groundwater and surface water monitoring system pursuant to RSA 485-C and Env-Or 700 is satisfied by GWP #198704033 – see also note at Env-Sw 804.02(b) above. Preliminary capping plan proposed with Closure Plan (see Env-Sw 807, Env-Sw 1006, and Env-Sw 1106). Other necessary features are incorporated in the existing built facility.
- 805.02(b) – Not applicable – Landfill is not unlined.

Env-Sw 805.03 Landfill Subgrade and Base Grade Standards

- 805.03(a) – Applicable – See Technical Specifications, Section 02222, *Excavation* as well as Section 02223, *Filling*. See also Env-Sw 805.06(c) below. Satisfies requirement.
- 805.03(b) – Applicable – “Screened Till” identified in Technical Specifications, Section 02223, *Filling*, meets hydraulic conductivity requirement. “Select Secondary Subgrade Fill” shown in details on the Design Drawings is defined in the Technical Specifications, Section 02222, *Excavation*. Satisfies requirement.

To ensure the subgrade meets the requirement of this rule, the permit requires the permittee to revise Technical Specification, Section 02223, *Filling*, to identify that “Screened Till” is also known as “Select Secondary Subgrade Fill.”

- 805.03(c), (d), and (e) – Applicable – See Application Design Report, Appendix A.2, *Geotechnical Calculations: Landfill Stability Analyses*. Stamped by professional engineer (Robert J. Grillo, P.E. License No. 07565, expires 8/31/2022). Satisfies requirement.
 - Subgrade. Subgrade will consist of either natural soils or compacted fill. Pursuant to Technical Specifications, Section 02222, Part 3.03, subgrade will be proof-rolled prior to construction of liner system and be compacted to at least 95% of the maximum dry density as determined by ASTM D1557. Pursuant to Technical Specifications, Section 02223, Part 3.02, Common Borrow Fill and Screened Till shall be compacted to 95% of the maximum dry density as determined by ASTM D1557, and within 3% of optimum moisture content.
 - Interface with Existing Waste. Waste will be placed in accordance with current landfilling practices at the facility. A cut in existing waste of up to 28 feet high and 520 feet long at the toe of the existing waste slope in Stage IV is proposed (to allow access to connect the proposed and existing leachate collection systems), and will remove about 5,000 cy of previously entombed waste. The cut is proposed to be made at a 1H:1V angle or flatter. The cut will be incrementally advanced, with cover materials placed over the excavated cut area at the end of each operating day. The length of time this cut will exist is proposed to be several months, although work in the excavation is not expected to take more than several days. Stability calculations for the temporary cut condition were provided – the estimated factor

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of safety is 2.4. Backfilling procedures and schedule for this cut area are incorporated into the fill sequencing drawings. Based on these drawings, the cut will be filled in lifts, as waste lifts are placed in Stage VI, Phase I.

- Global Stability. Two cross-sections from Stage VI (Stage VI, Section A-A' and Section B-B'), and one previously analyzed cross-section from Stage V (Stage V, Section A-A') were included in the design evaluation. The results of the analyses indicate global factors of safety against failure of 3 or greater. The supporting berms are proposed to be constructed using common borrow soil placed and compacted in accordance with the technical specifications. When new berms are proposed to support the waste mass, they must be constructed in accordance with the QA/QC Plan (see Env-Sw 805.16).
- Liner Stability. Liner stability (interface) is estimated to have a factor of safety of 1.5 or greater.
- Seismic Stability. See comments regarding "Global Stability" above. Pseudo-static stability analysis method used. The results of the seismic analyses indicate that deformation of the system during a seismic event greater than allowable tolerance is not anticipated.
- Cap Stability. Proposed design is preliminary. For 3H:1V slopes, stability analyses indicate a factor of safety of about 1.6 in the static condition, and a predicted seismic deformation within allowable tolerance. For 2H:1V slopes, stability analyses indicate a factor of safety of about 1.7 in the static condition, and a predicted seismic deformation within allowable tolerance. NOTE: 2H:1V slope design does not comport with Env-Sw 805.10.

To ensure the as-built facility meets the requirements of Env-Sw 805.03(c), the permit requires the permittee to:

- Submit with the written inspection report and as-built certification required pursuant to Env-Sw 1104.04(h) and Env-Sw 1104.07(f), an inspection report prepared pursuant to Env-Sw 1104.04(h) for earthwork completed prior to this approval that was required to facilitate construction of Stage VI; and
- Prioritize backfilling of excavated waste areas, inclusive of the waste cut, such that they are filled as soon as practicable.

- 805.03(f) – Applicable – See Technical Specifications, Section 02223, *Filling*.
 - (1) Section 02223, Parts 2.01.C and 3.02.E specify 12" thick loose lift. Satisfies requirement.
 - (2) Section 02223, Part 2.01.C specifies 100% passing the 1-inch sieve. Satisfies requirement.
 - (3) Section 02223, Part 3.02.E specifies compaction to 95% of the maximum dry density as determined by ASTM D1557. Satisfies requirement.

- 805.03(g) – Applicable – See review of Env-Sw 805.06 and Env-Sw 806.05 herein.

Env-Sw 805.04 Liner Material and Construction Requirements

- 805.04(a) – Not applicable – No soil liners proposed.
- 805.04(b)(1) – Applicable – See Design Drawings, Drawing No. D1, Detail 1/8, and Technical Specifications, Section 02276, *High Density Polyethylene (HDPE) Liner*. Satisfies requirement.
- 805.04(b)(2) – Applicable – HDPE geomembrane liner. Satisfies requirement.
- 805.04(b)(3) – Not applicable – Seaming methods using solvents are not proposed.
- 805.04(c) – Not applicable – No composite liners proposed.
- 805.04(d) – Applicable – See review of Env-Sw 805.16 herein.

Env-Sw 805.05 Liner System Design Standards

- 805.05(a) – Applicable – See review of Env-Sw 805.04, Env-Sw 805.06 and Env-Sw 805.07 herein.
- 805.05(b) – Applicable – See review of Env-Sw 805.12 through 805.15 herein.
- 805.05(c) – Applicable – Satisfies requirement.

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- 805.05(d) – Not applicable – Not a single-lined facility.
- 805.05(e) – Applicable – See review of Env-Sw 805.05(a) and (f) herein. Satisfies requirement.
- 805.05(f) – Applicable – Proposed geometry consists of extended sideslopes. Secondary liner to be overlain by geocomposite pursuant to Env-Sw 805.05(g). Primary liner to be overlain by 18” thick drainage layer of select sand. See also review of Env-Sw 805.06 and Env-Sw 806.05 herein. Satisfies requirement.
- 805.05(g) – Applicable – See Technical Specifications, Section 02273, *Drainage Geocomposite*, and Design Drawing No. D1, Detail 1/8. Satisfies requirement.
- 805.05(h) – Applicable – Liner grades are proposed at 3H:1V (extended sideslopes), except where leachate cutoff trenches are present, in which case liner grades shall not exceed 2H:1V consistent with this rule – not clear on Drawing D1, Detail 4/7 the upgradient slope of the leachate cutoff trench. Stability calculations were provided – see review of Env-Sw 805.03. Interface stability calculations were provided for Stage V, which the permittee’s licensed engineer asserts is the critical surface for the proposed design. **Unclear if satisfies requirement.**

To ensure this requirement is met, the Drawing D1, Detail 4/7 and other details as needed shall be revised to show no liner slope exceeding 2H:1V.

- 805.05(i) – Applicable – See review of Env-Sw 805.16 herein.
- 805.05(j) – Applicable – No penetrations of liner systems proposed in low areas or in any location where leachate might collect. Satisfies requirement.

Env-Sw 805.06 Leachate Collection and Removal System Design Standards

- 805.06(a) – Applicable – Primary and secondary leachate collection systems included in design. See also review of Env-Sw 806.05 herein. Satisfies requirement.
- 805.06(b) – Applicable – See Design Report, pages 3-5, and Design Drawings. Satisfies requirement.
- 805.06(c) – Applicable – Freezing conditions/frozen ground conditions not explicitly addressed. Leachate collection and removal system design is consistent with previously approved designs for this facility, for which the permittee has not reported operational issues during freezing conditions. Satisfies requirement.
- 805.06(d) – Applicable – Methodology and materials consistent with previously approved designs. See review of Env-Sw 805.06(e), (f), (g), (i), (o), and (p).
- 805.06(e) – Applicable – See Design Report, including Appendix A-1. The time of concentration is 41 hours with 6 feet of waste in place. A 25-year, 48-hour storm event was used for rainfall intensity. (Rainfall intensity was taken from Northeast Regional Climate Center estimates. NHDES notes that the precipitation tables used are dated 2013; however, based on a brief comparison with precipitation tables dated July 1, 2020, the Extreme Precipitation Estimates are not different, but the confidence intervals are – because the precipitation estimates used have not changed, new calculations are not required on that basis.) Professional Engineer concludes no storage on the Stage VI liner system during a 25-year event. Appendix D.8 is referenced but not included (see Design Report, Appendix A-1, Section 4, page vii). “Base flow” estimated using historical flows in 2017, 2018 and 2019 at pump stations 1 and 2. Pump station 3 not addressed (see also Design Report, page 5). **Unclear if satisfies requirement.**
- 805.06(f) – Applicable – See Design Report, including Appendix A-1. The time of concentration is 41 hours with 6 feet of waste in place. A 100-year, 48-hour storm event was used for rainfall intensity. (Rainfall intensity was taken from Northeast Regional Climate Center estimates. See note under Env-Sw 805.06(e) herein.) 100-year storm event HELP model results referenced but not included. **Unclear if satisfies requirement.**
- 805.06(g) – Applicable – See 805.06(f) above. Calculations do not show whether leachate generation and storage

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capacity is inclusive of all stages; that is, leachate storage capacity calculations do not appear to include storage and contribution from primary and secondary systems through Pump Station 3. Further, unclear if leachate removal rate is similarly comprehensive; that is, if tanker truck removal is cumulative for all storage capacity and the maximum daily rate of removal needed is possible during permitted operating hours (6 am to 6 pm).

Unclear if satisfies requirement.

- 805.06(h) – Not applicable – Leachate collection and removal systems are not directly connected to WWTF.
- 805.06(i) – Applicable
 - (1) Applicable – HDPE pipes, viton gaskets, and Type 18-8 or 304 stainless steel specified (below grade) and zinc-plated (above-grade). See Technical Specifications, Section 02619, *High Density Polyethylene Pipe and Fittings*. PVC specified on drawings inside secondary containment (See Design Drawings, Drawing No. D-1, Detail 12/5). See Technical Specifications, Section 02622, *PVC Pipe and Fittings*. Satisfies requirement.
 - (2) Applicable – Flow and hydraulic head are not proposed to be separately monitored for Stage VI (which consists of two cells: South and East). Using a cutoff pipe (which has cleanout access), Stage VI-South primary leachate will be directed to sump for Stage IV Phase II, and Stage VI-East primary leachate will be directed to sump Stage II Phase II. Further, secondary leachate flows will not be directed but instead will sheet flow by gravity to Stage IV Phase II, Stage IV Phase I and Stage III secondary sumps. Design consistent with previously approved designs for this facility. Satisfies requirement.
 - (3) Applicable – Satisfies requirement.
 - (4) Applicable – See Design Report, Appendix A-1. Satisfies requirement.
 - (5) Applicable – See Design Report (page 18). Satisfies requirement.
- 805.06(j) – Applicable – Solvent welding not proposed. Satisfies requirement.
- 805.06(k) – Applicable
 - (1) Applicable – See review of Env-Sw 805.06(e) and (f) herein.
 - (2) Applicable – See Technical Specifications, Section 02234, Select Sand. Satisfies requirement.
 - (3) Applicable – See review of Env-Sw 805.16 herein.
- 805.06(l) – Applicable – No recirculation proposed. Satisfies requirement.
- 805.06(m) – Not applicable – No recirculation proposed and existing facility does not have approval to recirculate leachate.
- 805.06(n) – Applicable – See Operating Plan, Section 6.7, *Spare Pumps and Related Mechanicals*, and Section 6.8, *Back Up Power Plan*. Fulltime operator is present on site during normal operating hours and generators are available on-site. Satisfies requirement.
- 805.06(o) – Applicable – See (3) below. **Does not satisfy requirement.**
 - (1) Backup pumping capacity available;
 - (2) Backup power supply available;
 - (3) Relocated pump station 3 does not have high water alarm; and
 - (4) Efficiency during average and peak flow addressed (see Design Report, Appendix A-1).
- 805.06(p) – Applicable – No changes proposed to existing sumps or existing storage tanks; therefore, no evaluation undertaken of these existing features. One relocated pump station proposed that requires an extension of existing pump lines and detection systems; features included (see Design Drawings, including Drawing No. 6). Satisfies requirement.

Based on an overall review of the application relative to Env-Sw 805.06 requirements, NHDES believes that the permittee has provided sufficient information to demonstrate that Stage VI will comply with these requirements; however, certain information must be submitted for record, and some documents updated.

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To ensure compliance with Env-Sw 805.06, the permit requires the permittee to:

- Provide Appendix D.8, or a correction to the calculation package with regards to Appendix D.8, including an explanation as to the change(s);
- Submit the 100-year storm event HELP model results for record;
- Revise the leachate storage capacity calculations as needed to (a) ensure primary and secondary flows for Pump Station 3 are included and the existing storage capacity is adequate; and (b) ensure that tanker truck removal can be accomplished within the permitted operating hours (6 am to 6 pm) to meet the requirements of Env-Sw 805.06;
- A trend analysis of leachate flows, presented numerically and graphically, for each leachate flow monitoring point shall be included in the quarterly reports required pursuant to Env-Sw 806.08; and
- Add a high water alarm to pump station 3.

Env-Sw 805.07 Leak Detection and Location System Design Standards

- 805.07(a)
 - In the “new facility” footprint, applicable for primary liner; not applicable for secondary liner/ bottommost liner, because it is overlain by a drainage geocomposite [Env-Sw 805.07(a)(1)]. Satisfies requirement.
 - In the “vertical expansion” footprint, a drainage geocomposite or composite liner is not used in the secondary system in a portion of Stage I; therefore, a leak detection and location system is required below the secondary (i.e., bottommost liner) in this non-conforming area (effectively, a third leachate collection and removal system). Applicant submitted a waiver request as part of this application. See Env-Sw 202 herein.
- 805.07(b) – Applicable – The secondary leachate collection system is the leak detection and location system for the primary liner; therefore, the leachate collection system in the secondary must comply with this requirement.
 - In the “new facility” footprint, see Design Report, Appendix A-1, Section 2. Time to convey liquids to observation point is less than 24 hours. Leak isolation and detection system design consistent with previously approved designs for this facility. Satisfies requirement. NHDES notes that the referenced figure “Secondary Pipe Layout” was not provided.
 - For the “vertical expansion” footprint, applicant submitted a waiver request as part of this application. See Env-Sw 202 herein.

To ensure a complete record, the permit requires the permittee to:

- Provide the “Secondary Pipe Layout” figure referenced in Section 2, Leak Detection and Location System, of the design report calculation package;

Env-Sw 805.08 Groundwater and Surface Water Monitoring System Design Standards

- 805.08 – Applicable – See groundwater permit GMP # 198704033. Satisfies requirement.

Env-Sw 805.09 Stormwater Management System Design Standards

- 805.09(a) – Applicable – Included in design. Satisfies requirement.
- 805.09(b) – Applicable – A 25-year, 24-hour design storm used. Satisfies requirement.
- 805.09(c) – Applicable – See Design Report, Appendix A.3, Stormwater Management Report. Note that if more than 4 acres of exposed geomembrane used for intermediate cover, evaluation must be revisited. Satisfies requirement.

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To ensure compliance with the stormwater design, the permit requires the permittee to add to the operating plan a statement that if more than 4 acres of exposed geomembrane is used as cover material, a qualified professional engineer must re-evaluate stormwater management requirements.

- 805.09(d) – Applicable – Satisfies requirement.
 - 805.09(e) – Applicable – Satisfies requirement.
 - 805.09(f) – Applicable – Satisfies requirement.
 - 805.09(g) – Applicable – See Design Report, Appendix A.3, Stormwater Management Report; AoT Permit No. AOT-1767 issued March 20, 2020. Satisfies requirement.
 - 805.09(h) – Applicable – No leachate proposed to be managed as stormwater. Satisfies requirement.
 - 805.09(i) – Applicable – Included in design. See review of Env-Sw 806.02. Satisfies requirement.
 - 805.09(j) – Applicable – Included in design. Satisfies requirement
 - 805.09(k) – Applicable – Included in design. Satisfies requirement
 - 805.09(l) – Applicable – Included in design. Satisfies requirement
 - 805.09(m) – Applicable – Included in design. Satisfies requirement
 - 805.09(n) – Applicable – Closed drainage systems included in design. Provisions for inspections, monitoring and maintenance added to operating plan, Section 5.9, *Stormwater Management Systems*. Satisfies requirement.
- Env-Sw 805.10 Landfill Capping System Design Standards
- 805.10(a) – Applicable – Plans are preliminary; final closure plans shall meet the requirements of the rules in effect at the time of final design. Preliminary plans satisfy requirement.
 - 805.10(b) – Applicable – See review of Env-Sw 805.10(e) herein.
 - 805.10(c) – Not applicable – Landfill is not unlined.
 - 805.10(d) – Not applicable – Landfill is not unlined.
 - 805.10(e) – Applicable – See Stage VI Closure Plan drawings (Application, Part 2, PDF pages 129-133) and Design Report (Application, Part 2, PDF page 239). Plan is preliminary; final closure plan shall meet the requirements of the rules in effect at the time of final design approval. Following review is based on the Capping System Section for 3H:1V slopes (Drawing No. C-3, Detail 6/C2).
 - (1) 12" Intermediate Cover proposed. Intermediate cover is an unspecified soil. Satisfies requirement.
 - (2) 6" Select Sand proposed (see Technical Specifications, Section 02234, *Select Sand*). Satisfies requirement.
 - (3) 40-mil textured LLDPE geomembrane proposed. Satisfies requirement.
 - (4) 12" Select Sand with geonet (i.e., drainage geocomposite) proposed. See also Technical Specifications, Section 02234, *Select Sand*. Satisfies requirement.
 - (5) 6" of Screened Till overlain by 4" Topsoil proposed. Satisfies requirement.
 - NHDES further notes:
 - Stormwater management features include Typical Dropchute (Detail 4/C2), Drainage Bench (Detail 5/C2), and Drainage Bench Outlet Into Dropchute (Detail 2/C2). Stormwater management features proposed are consistent with previously approved preliminary designs, and must meet requirements at time of final design approval. At this time, NHDES takes no exception to the preliminary design of stormwater management features.
 - Capping System Section for 2H:1V slopes (Drawing No. C-3, Detail 6/C2) which consists of the following layers: 12" intermediate cover, 12" gas transmission layer, 40-mil LLDPE geomembrane, geocomposite, 12" gravel layer, and 10" NHDOT "C" stone. While the applicant

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may request NHDOT Type “C” stone as an alternative to topsoil per Env-Sw 805.10(f), the underlying layers must conform to the requirements of Env-Sw 805.10(e). **Does not satisfy requirements.**

- 805.10(f) – Applicable – See Design Report, page 19 (Application, Part 2, PDF page 239). Relative to the 2H:1V capping section detail, applicant’s determination of need is not sufficient relative to the 2H:1V slopes. Applicant asserts that 2H:1V slopes are required around Stage III pump station to meet local zoning requirements to keep the pump station within the landfill zoning district. NHDES does not agree with the applicant’s assertion that the 2H:1V slopes and thus an alternative cap design are necessary to meet zoning requirements – alternative slope geometries and/or topsoil alternative may be used to meet cap design requirements *and* maintain compliance with local zoning restrictions. **Does not satisfy requirement.**

To address the deficiencies related to Env-Sw 805.10(e) and (f), the permit requires the permittee to revise the details for the 2H:1V cap cross-section around Pump Station 3 and, if needed, the final grading envelope to meet the capping system design requirements of Env-Sw 805.10.

NHDES acknowledges that, if a change in final grading is required, a reduction in the volume capacity of the landfill may occur. See further discussion in Attachment A, *Public Benefit Determination*, herein.

- 805.10(g) – Not applicable – No low permeability capping system existing or proposed.
- 805.10(h) – Applicable – Both swales and moisture retention (Screened Till) layer proposed. Satisfies requirement.
- 805.10(i) – Applicable – See review of Env-Sw 805.03 herein. Satisfies requirements.
- 805.10(j) – Applicable – See Stage VI Closure Plan, Drawing No. C-2. Satisfies requirement.
- 805.10(k) – Applicable – See Stage VI Closure Plan drawings. Plans are preliminary; final design shall meet requirements at time of final design approval.
- 805.10(l) – Applicable – See Design Report, Appendix A.3, Stormwater Management Report. Satisfies requirement.
- 805.10(m) – Applicable – Existing facility has an active LFG management system and gas probes around the facility to monitor for explosive gas migration. Preliminary LFG system features at time of closure shown on Stage VI Closure Plan Drawing No. C-2 and associated detail sheets. Some LFG migration probes shown on Closure Plans – see Sheet Number A-1 in Operating Plan for further details. Plans are preliminary; final design shall include existing and required features.
- 805.10(n) – Applicable – Requirements not addressed. Plans are preliminary; final design shall consider these requirements.
- 805.10(o) – Applicable – Limit of waste marked per Drawing D2, Detail 10/7. Satisfies requirement.
- 805.10(p) – Applicable – Final design proposes 3H:1V slopes, except near toe of slope (where the grade is 2H:1V) and proximate to the Stage III pump house. For the area proximate to the pump house, the average slope (weighted by the hypotenuse) is about 2.5H:1V (toe to top). The average slope of the proposed sections for Stage VI is 2.5H:1V or greater. Satisfies requirement.

Env-Sw 805.11 Other Landfill Design Requirements

- 805.11(a) – Applicable – See Stage VI Facility Sequencing Plans. A diversion berm is proposed between Stage VI-East and Stage VI-South. Backfilling of waste cut at toe of Stage IV slope is addressed in Sequence 2 (see Drawing No. 3). Satisfies requirement.
- 805.11(b) – Applicable – Nomenclature predates the rule and is considered grandfathered. Nomenclature

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proposed is consistent with previous developments at this facility. Satisfies requirement.

- 805.11(c) – Applicable – See Env-Sw 805.11(b). Satisfies requirement.
- 805.11(d) – Applicable – See Stage VI Facility Sequencing Plans; and Operating Plan Section 3.7. Decommissioning of monitoring wells cannot be avoided with proposed configuration; however, monitoring wells are proposed to be replaced. See review of Env-Sw 804.02 herein. Satisfies requirement.
- 805.11(e) – Applicable – See Stage VI Facility Sequencing Plans; and Operating Plan Section 3.7, including Appendix H. Satisfies requirement.
- 805.11(f) – Applicable – See Stage VI Facility Sequencing Plans; and Operating Plan Section 3.7, including Appendix H. Satisfies requirement.
- 805.11(g) – Applicable – See design drawings. Satisfies requirement.
- 805.11(h) – Applicable – Additional road constructed on perimeter berm includes litter fence (see Drawing D2, Detail 10/7). Satisfies requirement. No changes proposed to other roads - no evaluation undertaken.
- 805.11(i) – Applicable – See review of Env-Sw 1103.04 herein.
- 805.11(j) – Applicable – Satisfies requirement.
- 805.11(k) – Applicable – Limited interior berm proposed. Exterior berms included in stability calculations – see review of Env-Sw 805.05. Satisfies requirement.
- 805.11(l) – Applicable – See review of Env-Sw 804.04(c). Satisfies requirement.

Env-Sw 805.12 MSW Landfill Design Standards

- 805.12(a) – Applicable – See review of Env-Sw 805.05 herein. Satisfies requirement.
- 805.12(b) – Applicable – Satisfies requirement.

Env-Sw 805.13 MSW Incinerator Ash Landfill Design Standards

- 805.13 – Applicable – See review of Env-Sw 805.05 herein. Satisfies requirement.

Env-Sw 805.14 Construction/Demolition Debris Landfill and Coal Ash Landfill Design Standards

- 805.14 – Not Applicable

Env-Sw 805.15 Design Standards for Landfills Receiving Other Solid Waste Types

- 805.15(a) – Applicable – See review of Env-Sw 805.05 herein. Satisfies requirement.
- 805.15(b) – Not Applicable

Env-Sw 805.16 Quality Assurance/Quality Control (QA/QC) Standards for Liner and Capping Systems

- 805.16(a) – Applicable – Purpose and instruction statement. No evaluation undertaken..
- 805.16(b) – Applicable
 - (1) ASTM D422 withdrawn, not replaced. ASTM C136/C117 proposed. Satisfies requirement.
 - (2) Satisfies requirement.
 - (3) ASTM D3042 proposed. **Does not satisfy requirement.**

To address this deficiency, the permit requires the permittee to update the technical specifications to replace method ASTM D3042 with method ASTM D4373.

- 805.16(c) – Applicable
 - (1) Satisfies requirement.
 - (2) Satisfies requirement.
 - (3) Not proposed for use.
 - (4) Satisfies requirement.
 - (5) Satisfies requirement.
- 805.16(d) – Applicable

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- (1) Satisfies requirement.
- (2) Satisfies requirement.
- (3) Satisfies requirement.
- (4) Satisfies requirement.
- (5) Satisfies requirement.
- (6) Satisfies requirement.
- (7) Satisfies requirement.
- (8) Satisfies requirement.
- (9) Satisfies requirement.
- (10) Satisfies requirement.
- (11) Satisfies requirement.

Env-Sw 805.17 Vertical Expansion of Landfills

- 805.17(a) – Applicable – See definition of vertical expansion in Env-Sw 104.61. The majority of additional waste volume is proposed to be placed over the existing waste containment system. As such, proposed expansion must meet the requirements for a vertical expansion. See Env-Sw 805.05 and Env-Sw 202 herein. Satisfies requirement.
- 805.17(b) – Applicable – No new MSE berms proposed. No evaluation undertaken.

Env-Sw 806 OPERATING REQUIREMENTS

Env-Sw 806.01 Applicability

- 806.01(a) – Applicable – The rules in this part apply to operation of the subject landfill because it is not one of the listed exceptions.
- 806.01(b) – Applicable – The operating requirements of this part apply to the landfill as a complement to the operating requirements in Env-Sw 1005, Env-Sw 1105, and Env-Sw 900.

Env-Sw 806.02 Waste Placement

- 806.02(a) – Applicable – See Operating Plan, Section 3.7, *Waste Management Following Receipt (Fill Sequence Plan)*. See also review of Env-Sw 805.11. Fill sequencing plans included in Operating Plan, Appendix H. Satisfies requirement.
- 806.02(b) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No waste placement proposed outside liner system. No further evaluation undertaken.
- 806.02(c) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Controlled placement described in operating plan. No further evaluation undertaken.
- 806.02(d) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Fill sequencing addressed in Fill Sequencing Plans and Operating Plan. No further evaluation undertaken.
- 806.02(e) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Not addressed in Operating Plan. No further evaluation undertaken.
- 806.02(f) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Section 3.7 of Operating Plan. No further evaluation undertaken.
- 806.02(g) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7, *Waste Management Following Receipt (Fill Sequence Plan)*, including WMD Log No. 2020-47865-02. No further evaluation undertaken.
- 806.02(h) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7, *Waste Management Following Receipt (Fill Sequence Plan)*, including WMD Log No. 2020-47865-02. No further evaluation undertaken.

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Env-Sw 806.03 Landfill Cover During Operations

- 806.03(a) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7.3, *Landfill Cover*. Changes proposed are relative to on-site production of CWDP #6, and cover material removal. Cover material removal does not relieve the permittee of compliance with these requirements. No further evaluation undertaken.
- 806.03(b) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7.3, *Landfill Cover*. Changes proposed are relative to cover material removal. Cover material removal does not relieve the permittee of compliance with these requirements. No further evaluation undertaken.
- 806.03(c) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7.3, *Landfill Cover*. Changes proposed are relative to on-site production of CWDP #6, and cover material removal. Cover material removal does not relieve the permittee of compliance with these requirements. No further evaluation undertaken.
- 806.03(d) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 3.7.3, *Landfill Cover*, and Section 2.1, *Authorized Wastes*. Changes proposed relative to on-site production of CWDP #6, and cover material removal. No further evaluation undertaken.

NHDES notes the following:

- Removal of final cover or cap is a construction activity to be included in the Type II application for Phase II construction and operation.
- In order for NCES to make the connection from Stage VI leachate collection systems to existing leachate collection systems, a waste excavation of up to approximately 28 feet in the southwest corner of the existing landfill is required. The waste excavation will exist during both construction and operation of the facility.
- Limited details and no dedicated technical specifications or best management practices for use of a spray-on cover material (such as Posi-Shell® or an approved equivalent, see Drawing No. 5 and Technical Specifications, Appendix B – Odor Control Plan) were included in the application.

To ensure that final cover/cap removal occurs as required pursuant to a permit modification, the permit requires the permittee to revise the operating plan to remove instructions regarding final cover or cap removal.

To ensure cover materials applied during construction will meet cover requirements during operations, the permit requires the permittee to ensure cover materials used during construction activities meet the requirements of Env-Sw 806.03.

In addition, NHDES is approving use of a spray-on cover material such as Posi-Shell® or an approved equivalent as a cover material during construction activities only, with conditions.

To ensure a spray-on applied cover material meets the requirements of Env-Sw 806.03, the permit requires the permittee to add to the Odor Control Plan a section regarding use of spray-on cover materials during construction activities, with best management practices incorporated.²

² Best management practices were identified by the Minnesota Pollution Control Agency. See guidance document “Alternate Daily Cover: Spray-On Cover Materials,” Waste/Solid Waste Publication No. 5.11, dated May 2009.

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Env-Sw 806.04 Operating Standards for Groundwater and Surface Water Monitoring – Applicable – Relocation of some monitoring wells proposed; to be managed under groundwater permit GMP # 198704033. Evaluation to be performed pursuant to the requirements of RSA 485-C, Rules Env-Or 600 and Env-Or 700, and GMP # 198704033. See also review of Env-Sw 804.02 herein.

Env-Sw 806.05 Leachate Management Requirements

- 806.05(a)(1) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No proposed changes to leachate disposal practices. No further evaluation undertaken.
- 806.05(a)(2) – Not Applicable – No alternative leachate management system proposed.
- 806.05(b) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 4.1, *Leachate Management Plan*. No changes to operational practices proposed. No further evaluation undertaken.
- 806.05(c) – Applicable – See review of Env-Sw 805.06 herein.
- 806.05(d) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Minor changes proposed in Operating Plan, Section 4.1.3, *Pumping/Removal Schedule*. Leachate removal schedule not provided (e.g., loadout rate in gallons or truckloads per day). **Does not satisfy requirement.**

To ensure operations meet this requirement, the permit requires the permittee to add to the operating plan:

- A leachate removal schedule that identifies the design load out rate of the leachate collection system; and
- Needed amount of leachate removal per typical operating day and during or immediately following a 25-year storm event and a 100-year storm event.

- 806.05(e) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No changes proposed. No evaluation undertaken.
 - 806.05(f) through (I) – Not Applicable – No alternative leachate management methods proposed.
- Env-Sw 806.06 Stormwater Management Requirements – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See also review of Env-Sw 805.09 herein. No further evaluation undertaken.

Env-Sw 806.07 Decomposition Gas Control Requirements

- 806.07(a) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Expansion of LFG system proposed. No further evaluation undertaken.
- 806.07(b) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 5.3, *Gas Monitoring and Control*, and Appendix C, *Operations and Maintenance Manual, Gas Management System*. No procedural changes proposed. No further evaluation undertaken.
- 806.07(c) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan, Section 5.3, *Gas Monitoring and Control*, and Appendix C, *Operations and Maintenance Manual, Gas Management System*. Closure Plan is preliminary. No procedural changes proposed. No further evaluation undertaken.
- 806.07(d) – Applicable – The number and locations of gas probes is proposed to change. Nine (9) gas probes proposed to be replaced by six (6). Spacing between gas probes is proposed to increase, particularly along the southern and eastern sides, from about 300 feet to between about 450 and 575 feet, except at the northeastern-most area of Stage VI where the spacing between GP-5 and GP-12A is greater, likely due to gravel borrow pit operations. Spacing is generally consistent with previously approved gas probe spacings. Satisfies

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requirement.

- 806.07(e) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See Operating Plan Section 5.3, *Gas Monitoring and Control*. No procedural changes proposed. No further evaluation undertaken.
- 806.07(f) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Proposed gas probe layout plan included in Operating Plan. Indoor air monitoring points and subliner gas wells included. NHDES notes that subliner gas wells monitoring location likely requires a system extension that is not shown on the preliminary design drawings. No further evaluation undertaken.

To ensure the design drawings and operating plan align, the permit requires the permittee to include an extension of the monitoring location for subliner gas wells in the design and construction drawings.

- Env-Sw 806.07(g) through (i) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No changes proposed. See Operating Plan, Sections 5.3, *Gas Monitoring and Control*, and Appendix C, *Operations and Maintenance Manual, Gas Management System*. See also facility's air permits. No further evaluation undertaken.

Env-Sw 806.08 Inspections, Maintenance, Monitoring and Reporting Requirements – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. Closed stormwater system inspection requirements and snow and ice control requirements added. Other clarifications made. See review of Env-Sw 1105.11 herein.

Env-Sw 806.09 Other Operating Standards – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No procedural changes proposed. No further evaluation undertaken.

Env-Sw 806.10 Construction/Demolition Debris Landfill Operating Requirements – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No procedural changes proposed. No further evaluation undertaken.

Env-Sw 806.11 Asbestos Waste Landfill Operating Requirements – Not applicable – Facility is not authorized to accept asbestos waste.

Env-Sw 806.12 Prohibitions – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. No changes proposed. No further evaluation undertaken.

Env-Sw 807 CLOSURE REQUIREMENTS – Applicable – Plans are preliminary. See related reviews in Env-Sw 805 and Env-Sw 1106. Changes to existing approved closure plan are limited to those required to include new Stage VI airspace and footprint; no changes are proposed relative to closure procedures. Preliminary plans provide appropriate basis for preparing final plans prior to implementing closure. No further evaluation undertaken.

Env-Sw 808 LANDFILL RECLAMATION – Not Applicable

Env-Sw 809 RESERVED

Env-Sw 810 PERMIT-EXEMPT LANDFILLS – Not Applicable

Env-Sw 900 MANAGEMENT OF CERTAIN WASTES

Env-Sw 901 ASBESTOS – Not Applicable – Asbestos waste is not proposed as a waste type authorized for disposal at this facility. NHDES notes that if asbestos waste previously landfilled at the facility is disturbed, this part applies.

Env-Sw 902 ASH – Applicable – No changes proposed. No evaluation undertaken.

Env-Sw 903 CONTAMINATED SOILS – Applicable – No changes proposed. No evaluation undertaken.

Env-Sw 904 INFECTIOUS WASTE – Applicable – No changes proposed. No evaluation undertaken.

Env-Sw 905 TIRES – Applicable – No changes proposed. No evaluation undertaken.

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Env-Sw 1000 UNIVERSAL FACILITY REQUIREMENTS

Env-Sw 1001 PURPOSE AND APPLICABILITY

Env-Sw 1001.01 Purpose – Statement. No evaluation undertaken.

Env-Sw 1001.02 Applicability – Applicable – The rules in this chapter apply to the subject facility.

Env-Sw 1002 UNIVERSAL ENVIRONMENTAL PERFORMANCE REQUIREMENTS

Env-Sw 1002.01 Environmental Conservation and Protection – Applicable – See purpose of RSA 149-M and the Solid Waste Rules, Env-Sw 100 et seq. To the extent a facility complies therewith, satisfies requirement.

Env-Sw 1002.02 Discharge of Pollutants Prohibited – Applicable – The requirements herein apply independent of any approval granted pursuant to RSA 149-M and the Solid Waste Rules, Env-Sw 100 et seq. See Env-Sw 101.02(d) and Env-Sw 305.04(b).

Env-Sw 1002.03 Protection of Wildlife – Applicable – The requirements herein apply independent of any approval granted pursuant to RSA 149-M and the Solid Waste Rules, Env-Sw 100 et seq. See Env-Sw 101.02(d) and Env-Sw 305.04(b).

Env-Sw 1002.04 Safety

Env-Sw 1002.04(a) – Applicable – Requirement to be implemented and enforced as a condition of any approval granted. See review of Env-Sw 806.07 herein. No further evaluation undertaken.

Env-Sw 1002.04(b) – Applicable – Requirement to be implemented and enforced as a condition of any approval granted. See also design report, operating plan and closure plan. No further evaluation undertaken.

Env-Sw 1002.04(c) – Application – Requirement to be implemented and enforced as a condition of any approval granted. See also design report, operating plan and closure plan. No further evaluation undertaken.

Env-Sw 1002.04(d) – Applicable – The requirements herein apply independent of any approval granted pursuant to RSA 149-M and the Solid Waste Rules, Env-Sw 100 et seq. See Env-Sw 101.02(d) and Env-Sw 305.04(b).

Env-Sw 1002.05 Dams, Flowage and Flood Requirements

Env-Sw 1002.05(a) – Applicable – The requirements herein apply independent of any approval granted pursuant to RSA 149-M and the Solid Waste Rules, Env-Sw 100 et seq. See Env-Sw 101.02(d) and Env-Sw 305.04(b).

Env-Sw 1002.05(b) – Applicable – Requirement to be implemented and enforced as a condition of any approval granted. See design report, operating plan and closure plan. No further evaluation undertaken.

Env-Sw 1003 UNIVERSAL SITING REQUIREMENTS

Env-Sw 1003.01 Distance to Other Facilities

- 1003.01 – Applicable – See Design Report. Satisfies requirement.

Env-Sw 1003.02 Easements and Rights-of-Way

- 1003.02 – Applicable – See Design Report. Facility is located outside of easements or rights-of-way. Satisfies requirement.

Env-Sw 1003.03 Property Ownership and Access Rights

- 1003.03 – Applicable – See Design Report. Property is owned by permittee. Satisfies requirement.

Env-Sw 1003.04 Groundwater and Surface Waters

- 1003.04(a) – Applicable – See Design Report. Satisfies requirement.
- 1003.04(b) – Applicable – See Design Report. See Env-Sw 804.02 herein.

Env-Sw 1003.05 Wetlands

- 1003.05 – Applicable – See Design Report. No wetlands impact proposed. Satisfies requirement.

Env-Sw 1003.06 Shoreland Protection

- 1003.06 – Applicable – See Design Report. Satisfies requirement.

Env-Sw 1003.07 Designated Rivers

- 1003.07 – Applicable – See Design Report and WMD Log No. 2020-47865-03. Stage VI, Phase II is within the Designated River Corridor; however, the proposed expansion is set back a minimum of 100 feet from the

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landward extent of the 500 year floodplain and is screened from the river with vegetation and other natural barriers (see RSA 483:9-a,VII(c)). Satisfies requirement.

Env-Sw 1004 UNIVERSAL DESIGN REQUIREMENTS

Env-Sw 1004.01 Basic Design Requirements

- 1004.01 – Applicable – Existing facility. See review of Env-Sw 1002 and Env-Sw 1005 herein. Satisfies requirement.

Env-Sw 1004.02 Roads and Traffic Control

- 1004.02 – Applicable – No change to facility entrance/exit proposed; therefore, no evaluation undertaken. Proposed on-site road alignment/traffic pattern changes relate only to accessing active face of landfill. Perimeter road is proposed to be similar to current perimeter road; see Drawing No. D2, Detail 10/7 and Operating Plan, including Appendix H. See also Design Report, pages 9-10. Satisfies requirement.

Env-Sw 1004.03 Drainage

- 1004.03 – Applicable – See Design Report, Appendix A.3, Stormwater Management Report. Satisfies requirement.

Env-Sw 1004.04 Protection of Landfill Closure Systems

- 1004.04 – Applicable – Eastern Slope capping system to be removed; therefore, protection not required. West Side Slope capping system to remain; therefore, protection required. See Design Report (p. 23), Design Drawings and Sequencing Plans. Satisfies requirement.

Env-Sw 1004.05 Wastewater Systems

- 1004.05 – Applicable – No changes proposed. No evaluation undertaken.

Env-Sw 1004.06 Motor Vehicle Waste Collection

- 1004.06 – Not Applicable – The applicant does not propose a change in authorized waste for any of the motor vehicle wastes to which this rule is administratively applied, i.e., the motor vehicle wastes identified in RSA 149-M:18 (residential motor oil, residential motor vehicle batteries, and tires from residential motorized vehicles).

Env-Sw 1004.07 Equipment

- 1004.07(a) – Applicable – See Technical Specifications and Design Drawings. Satisfies requirement.
- 1004.07(b) – Not Applicable

Env-Sw 1005 UNIVERSAL OPERATING REQUIREMENTS

Env-Sw 1005.01 General Operating Requirements

- 1005.01 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See review of Env-Sw 1105 herein.

Env-Sw 1005.02 Unauthorized Use Prohibited

- 1005.02(a) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See review of Env-Sw 1105 and Env-Sw 1103.03. Lockable gates used at main entrance and southern access point (to gravel pit); and boulders used to obstruct vehicles at Muchmore Road. Fencing is installed along portions of the facility abutting Trudeau Road. Operator on duty when facility is open. No further evaluation undertaken.
- 1005.02(b) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See operating plan Section 3.3, specifically Sections 3.3.5 and 3.3.6. No further evaluation undertaken.
- 1005.02(c) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. While not an access restriction, surveillance cameras are used at the main entrance to the landfill and to the transfer station. NCES should periodically evaluate measures and update as appropriate. No further evaluation undertaken.

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Env-Sw 1005.03 Traffic Management

- 1005.03 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See Operating Plan, including Appendix H. No further evaluation undertaken.

Env-Sw 1005.04 Reuse of Waste

- 1005.04 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. Clarification added to operating plan relative to on-site production and use of CWDP #6. No further evaluation undertaken.

Env-Sw 1005.05 Public Benefit

- 1005.05 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See Attachment A herein.

Env-Sw 1005.06 Operator Qualifications

- 1005.06 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1005.07 Facility Staffing

- 1005.07 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1005.08 Financial Assurance

- 1005.08 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See review of Env-Sw 1400 herein.

Env-Sw 1005.09 Incident Reporting

- 1005.09 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1005.10 Out-of-State Waste Recordkeeping

- 1005.10 – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1006 UNIVERSAL CLOSURE REQUIREMENTS – Applicable – See review of Env-Sw 1106. No further evaluation undertaken.

Env-Sw 1100 ADDITIONAL FACILITY REQUIREMENTS

Env-Sw 1101 PURPOSE AND APPLICABILITY

Env-Sw 1101.01 Purpose – Statement. No evaluation required.

Env-Sw 1101.02 Applicability

- 1101.02(a) – Applicable – The rules in this chapter apply to the subject facility because it is not one of the listed exceptions.
- 1101.02(b) – Not Applicable – No alternative procedures to requirements in this chapter proposed.
- 1101.02(c) – Applicable – See review of Env-Sw 800, Env-Sw 900 and Env-Sw 1000 herein.

Env-Sw 1102 ADDITIONAL SITING REQUIREMENTS

- 1102.01 General Siting Requirements – Applicable – See review of siting requirements in Env-Sw 804 and Env-Sw 1003.
- 1102.02 Co-existence with Other Activities – Applicable – No changes proposed. No further evaluation

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undertaken.

Env-Sw 1103 ADDITIONAL DESIGN REQUIREMENTS

Env-Sw 1103.01 General Design Requirements

- 1103.01(a) – Applicable – Satisfies requirement.
- 1103.01(b) – Applicable – Satisfies requirement.
- 1103.01(c) – Applicable – See review of Env-Sw 805 and Env-Sw 806, as well as review of Env-Sw 1103 (following) and Env-Sw 1105 herein.

Env-Sw 1103.02 Equipment Installation

- 1103.02 – Applicable – See design drawings and technical specifications. Satisfies requirement.

Env-Sw 1103.03 Access Control

- 1103.03(a) – Applicable – Proposed addition of Tax Map 419 Lots 24 and 25 trigger review. See Design Report (p. 24). Satisfies requirement. 1103.03(b) – Applicable – See review of Env-Sw 1103.03(a) above. Signage not addressed. **Unclear if satisfies requirement.**

To ensure compliance with this requirement, the permit requires the permittee to submit for record confirmation that signage has been posted as required by Env-Sw 1103.03.

- 1103.03(c) – Applicable – Proposed addition of Tax Map 419 Lots 24 and 25 trigger review. See Design Report (pp. 23-24) and Operating Plan. Satisfies requirement.

Env-Sw 1103.04 Surrounding Properties

- 1103.04 – Applicable – The design incorporates features to minimize adverse impacts to surrounding properties, including but not limited to:
 - Dust control – pavement and gravel roads, erosion controls;
 - Litter control – litter fencing, setbacks from abutting properties;
 - Insects – limited opportunities for standing or ponded water in stormwater design and due to waste settlement;
 - Odors – landfill gas collection system, ability to apply and maintain cover materials, odor control plan during construction;
 - Vectors (e.g., rodents, birds) – ability to apply and maintain cover materials;
 - Spills – secondary containment in pump station, dual-walled pipes outside of landfill footprint;
 - Generation of methane and other explosive/hazardous gases – landfill gas collection system, and gas migration monitoring network;
 - Noise – limited construction hours, design facilitates routine operations occurring within the 6 am to 6 pm window;
 - Other Nuisances – visual impact minimized by vegetated buffers and, following waste fill completion, vegetated slopes blending with existing topography except around pump station 3 where NHDOT Stone is proposed.

To ensure compliance with this requirement, the permit requires the permittee to adhere to the following:

- Construction hours limited to 7 am to 6 pm consistent with previous approvals;
- Static alarms are to be used whenever and wherever not in conflict with health and safety regulations;
- Odor Control Plan to be revised to add details regarding use of spray-on cover material; and
- Revise cap design, and final grading, as needed, to meet requirements of Env-Sw 805.10.

Env-Sw 1103.05 Design Plans and Specifications, Content and Format

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- 1103.05(a) – Applicable – Satisfies requirement.
- 1103.05(b) – Applicable – Satisfies requirement.
- 1103.05(c) – Applicable – No elevation labels on final grades in Stage VI closure plan, Drawing No. C-2. **Does not satisfy requirement.**

To address this deficiency, the permit requires the permittee to add elevation labels to Closure Plan Drawing No. C-2.

- 1103.05(d) – Applicable – Drawings and specifications are stamped and/or provided under cover of professional engineer: Robert J. Grillo, NH P.E. License No. 07565, expires 8/31/2020. Satisfies requirement.
- 1103.05(e) and (f) – Applicable – Horizontal datum is NAD83 NH State Plane; Vertical datum is NAVD88. Satisfies requirement.
- 1103.05(g) – Not applicable
- 1103.05(h) – Applicable – Additional calculations or clarifications to calculations required as identified throughout this review. No further evaluation undertaken.

Env-Sw 1104 ADDITIONAL CONSTRUCTION REQUIREMENTS

- 1104 – Applicable – Construction requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1105 ADDITIONAL OPERATING REQUIREMENTS

Env-Sw 1105.01 Prerequisites for Operations – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1105.02 Notice of Intent to Operate – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1105.03 Operating Approval – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1105.04 Basic Operating Requirements – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1105.05 Signs and Postings – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed on design plans or in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1105.06 Facility Operating Records – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1105.07 Reporting Requirements – Applicable – Operating requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1105.08 Hours of Operation – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. Minor change proposed to leachate removal schedule in operating plan. Permittee has not submitted a demonstration as required to allow for an alternative to the 6 am to 6 pm operating window for leachate removal. No further evaluation undertaken.

To ensure compliance with the requirements herein, and as previously permitted, the permit requires the permittee to clarify that the routine hours for leachate removal are limited to routine operating hours of 6 am to 6 pm, including leachate removal trucks entering the facility.

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NHDES notes that leachate removal occurring outside of routine operating hours requires the permittee to file an incident report pursuant to Env-Sw 1005.09.

Env-Sw 1105.09 Receipt and Management of Waste

- 1105.09(a) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed relative to these requirements. No further evaluation undertaken.
- 1105.09(b) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.
- 1105.09(c) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.
- 1105.09(d) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. Not included in operating plan. No further evaluation undertaken.
- 1105.09(e) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. No changes proposed in operating plan relative to these requirements. No further evaluation undertaken.

Env-Sw 1105.10 Management of Residual Waste

- 1105.10(a) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See operating plan Section 4.0, *Residual Waste Management*. Landfill gas management added as a separate subsection for clarity, other minor changes for clarity. No further evaluation undertaken.
- 1105.10(b) – Applicable – Operational requirements to be implemented and enforced as a condition of any approval granted. See operating plan Section 4.0, *Residual Waste Management*. Satisfies requirement.
- 1105.10(c) – Not applicable – Facility produces certified waste-derived product CWDP No. 6 from residual waste (C&D) debris; however, the facility does not distribute to others (see Operating Plan, Section 3.7.3 at page 22). If permittee elects to distribute, this requirement applies.

Env-Sw 1105.11 Operating Plan Content and Format

- 1105.11(a) – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted.
- 1105.11(b) – Applicable – Satisfies requirement.
- 1105.11(c) – Applicable – Location and solid waste permit number (DES-SW-SP-03-002) are not included on each page. **Does not satisfy requirement.**

To satisfy this requirement, the permit requires the permittee to revise the operating plan to include the facility location and permit number on each page, including the cover page.

- 1105.11(d) – Applicable – See Application (Pt. 2), Operating Plan and supplement WMD Log No. 2020-47865-02

NHDES notes that not all changes in the operating plan were redlined or otherwise highlighted; therefore, the entire operating plan is subject to review. The proposed operating plan is compared to the Approved Operating Plan of Record, dated October 2016, and approved by permit modification dated December 28, 2018.

- (1) Section 1, Facility Identification

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- (1)a. – Applicable – Satisfies requirement.
- (1)b. – Applicable – Satisfies requirement.
- (1)c. – Applicable – The average weekly tonnage to be received at the facility (see Env-Sw 102.09(a)) is not identified. **Partially satisfies requirement.**
- (1)d. – Applicable – Satisfies requirement.
- (1)e. – Applicable – Satisfies requirement.
- (1)f. – Applicable – Satisfies requirement.
- NHDES notes that Facility History was added. NHDES takes no exception to the addition.

To address the deficiency, the permit requires the permittee to identify the average weekly tonnage to be received at the facility during the quarter in which the most waste is anticipated to be received pursuant to Env-Sw 102.09(a).

- (2) Section 2, Authorized and Prohibited Waste
 - (2)a. and b. – Applicable – No substantial changes made; minor adjustments to remove redundancies. Satisfies requirement.

To clarify the authorized wastes for this facility, NHDES has included a condition in the permit modification that updates the facility's authorized wastes as identified in the Stage IV approval effective March 13, 2003 and subsequently modified by changes in the Rules, NHDES practices and the NCES operating plan. Further, in response to public concerns regarding odors, NHDES is prohibiting the facility from accepting sludges that have not been treated for odors prior to receipt.

- (3) Section 3, Routine Operations Plan
 - (3)a. – Applicable – Minor change proposed. NHDES notes that leachate removal constitutes an active and routine aspect of facility operations and therefore shall occur between 6:00 a.m. to 6:00 p.m. under normal non-emergency circumstances pursuant to Env-Sw 1105.08. Removal outside normal hours is reserved for emergency circumstances only and is subject to incident reporting per Env-Sw 1005.09.

To ensure compliance with Env-Sw 1105.08, the permit requires the permittee to conduct active and routine facility operations between 6:00 a.m. and 6:00 p.m., and clarify in the operating plan that leachate removal outside of these hours is reserved for emergency circumstances only and requires the filing of an incident report per Env-Sw 1005.09.

- (3)b. – Applicable – Access controls identified, and include proposed expanded facility boundary. Grammatical errors make description difficult to understand. Traffic pattern plan and facility sequencing plans, with traffic patterns, included in Appendix H. Satisfies requirement.

To ensure compliance with Env-Sw 1105.11(a), the permit requires the permittee to clarify the language in paragraph one of Section 3.2 of the Operating Plan.

- (3)c. – Applicable – Declaration to be signed by hauler changed. NHDES has no objection. Other changes made to Subsection 3.3.3, Customer Education, Subsection 3.3.5, Waste unloading & Routine Inspection, 3.3.6 Random Load Inspection (changed from 5% of loads to one load per

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day). No other changes proposed. No further evaluation undertaken.

To ensure compliance with these requirements, the permit requires the permittee to:

- Restore the language in 3.3.5 reading "As refuse is spread at the working face, operators continue to visually inspect for unacceptable materials."
- Add to 3.3.6 that "*at least*" one load per day is randomly chosen to be inspected more thoroughly.

- (3)d. – Applicable – No substantial changes made. No further evaluation undertaken.
- (3)e. – Applicable – No changes proposed. No further evaluation undertaken.
- (3)f. – Applicable – No changes proposed. NHDES notes that sections refer to an incorrect appendix. No further evaluation undertaken.

To correct this error, the permit requires the permittee to update the operating plan to change the reference in Section 3.6 to Appendix F.

- (3)g. – Applicable – Fill sequencing plans included in Appendix H of the Operating Plan. Substantial revisions to Section 3.7.3, *Landfill Cover*, primarily regarding removal of temporary cover and final cover/cap systems. Removal of the final cover or cap system is a construction activity, requiring explicit approval by NHDES via the Type II permit modification process. See review of Env-Sw 806.03 herein. NHDES recommends more frequent monitoring of the leachate collection systems following cover removal. NHDES also notes that if more than 4 acres of exposed geomembrane is used, the stormwater management system evaluation must be revisited (Stormwater Management Report, p. 2). Further, NHDES notes that the operating plan does not state that all waste is to be covered at the end of each operating day (see Env-Sw 806.03(c)). **Partially satisfies requirement.**

The permit requires the permittee to revise the operating plan to:

- Remove instructions regarding final cover or cap removal;
- Add the requirement that buckets with teeth shall not be used within a specified distance of the anchor trench or liner system;
- Add that if more than 4 acres of exposed geomembrane is used, a qualified professional engineer must re-evaluate stormwater management requirements; and
- Add that cover material must be placed over all exposed waste no less frequently than at the end of each operating day.

- (3)h. – Applicable – This facility is authorized pursuant to permit modification dated 12/27/2001 to process C&D into a waste-derived product, specifically, CWDP No. 6 - Processed C&D and Soil Mixture, Alternative Daily Cover for RCRA Subtitle D Lined Landfills. Information included in 3.7.3, *Landfill Cover* and Appendix F. Satisfies requirement.
- (4) Section 4, Residual Waste Management Plan – Residual wastes include leachate and decomposition gas (aka landfill gas).
 - (4)a. – Applicable – Leachate quantities identified. Decomposition gas quantities not addressed. **Partially satisfies requirement.**
 - (4)b. – Applicable – Leachate management identified, but removal schedule not provided. See

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review of Env-Sw 805.06 herein. **Partially satisfies requirement.**

- (4)c. – Applicable – See review of Env-Sw 1105.10. Satisfies requirement.
- (4)d. – Applicable – Includes leachate and landfill gas condensate sampling requirements. Landfill gas is destroyed onsite using a flare. See facility’s air permits. Satisfies requirement.

NHDES found the operations and maintenance manual for NCES’ gas management system clear and understandable. A few remaining LFG system items are required to be addressed, and should be addressed in Section 4.3 of the Operating Plan.

To ensure the requirements of Env-Sw 1105.11(a) and Env-Sw 1105.11(d)(4) are met, the permit requires the permittee to:

- Add a very brief description of the landfill gas management system to Section 4.3, identify the quantity(ies) of landfill gas generated, and identify that the facility also has air permit(s).
- Add a leachate removal schedule that identifies the design loadout rate of the leachate collection system, and the needed amount of leachate removal per typical operating day and during or immediately following a 25-year storm event and a 100-year storm event

○ (5) Section 5, Facility Maintenance, Inspection and Monitoring Plan

- (5)a. through (5)c. – Applicable – No substantial changes proposed. No further evaluation undertaken.
- (5)d. – Applicable – No substantial changes proposed. Notification method not in accordance with Rules. No further evaluation undertaken.

To correct the discrepancy with Rule requirements, the permit requires the permittee to revise the notification provisions to identify that exceedances of the LEL limits require notification and a written incident report pursuant to Env-Sw 1005.09(a).

- (5)e. – Applicable – Operating Plan, Section 5.4, *Odor Control*, identifies measures to be taken to inhibit odors. No substantial changes proposed. No further evaluation undertaken.

NHDES has identified that odor complaint response and reporting as identified in the operating plan is not having the desired effect of improving reported odorous conditions. In addition, public comments identified odors as an issue of concern. To facilitate continuous improvement in odor control, NHDES has added conditions to the permit relative to odor control.

The permit requires the permittee to:

- Add that facility personnel who receive and respond to odor complaints shall be trained in detecting odors, identifying potential sources of odors, and documenting the odor complaint and NCES’ response actions, and such training shall be provided by a qualified third-party and renewed annually.
- Post a contact information for receiving complaints to the facility’s existing website (<https://www.casella.com/locations/bethlehem-nh-landfill>).
- By August 31 of each year of operations, submit an annual odor control evaluation report for July 1 through June 30 (preceding).

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- (5)f. – Applicable – No changes proposed. No further evaluation undertaken.
- (5)g. – Applicable – No changes proposed. No further evaluation undertaken.
- (5)h. – Applicable – No substantial changes proposed. No further evaluation undertaken.
- (5)i. – Applicable – No changes proposed. No further evaluation undertaken.
- Additional sections are included in the plan regarding stormwater management systems, groundwater monitoring, leachate breakout management, bird control (which can be also considered under vectors at (5)c above), asbestos records and historical asbestos waste burial location plan, and snow and ice control. NHDES takes no exception to the inclusion of these additional operating plan sections.

NHDES notes that, if asbestos waste is to be disturbed, the provisions of Env-Sw 901, Env-A 1800, RSA 141-E, 40 CFR 61, and 29 CFR 1910 should be reviewed and implemented as applicable.

NHDES notes that any substances used to control snow and ice (or dust) may effect local groundwater quality and such potential effect should be considered in context of the facility's groundwater permit.

- (6) Section 6, Contingency Plan
 - (6)a. – Applicable – Power outages added to list of contingencies. Accumulation of LFG or combustible gas (methane or explosive gases) detected above applicable LELs in Env-Sw 806.07(b)) added – NHDES notes that such addition is partially redundant with Section 5.3. Further NHDES notes that “disposal” relative to a leachate spill lacks clarity. Materials disposed in the landfill, whether they are generated on-site or off-site, must be a waste authorized for landfilling at the facility pursuant to it’s permit. Satisfies requirement.
 - (6)b. – Applicable – Recordkeeping and reporting requirements relative to LELs do not comport with Env-Sw 806.07 and Env-Sw 1005.09(a). **Partially satisfies requirement.**
 - (6)c. – Applicable – Satisfies requirement.

To address the deficiency, the permit requires the permittee to modify the operating plan to:

- Identify that when LELs exceed the limits identified in Env-Sw 806.07, the permittee shall file an incident report pursuant to Env-Sw 1005.09(a);

- (7) Section 7, Employee Training Program – Applicable – Descriptions of employee training programs removed. **Does not satisfy requirements.**

To address this deficiency and ensure compliance with Env-Sw 1105.11(a), the permit requires the permittee to restore the previous description of training requirements (Section 7) from the approved October 2016 Operating Plan. See also training regarding odors under (5)e. above.

- (8) Section 8, Recordkeeping and Reporting – Applicable – Recordkeeping requirements identified. Requirement to file an annual report removed from previously approved operating plan. Reporting requirements not identified. **Partially satisfies requirements.**

To address the deficiency, the permit requires the permittee to add to Section 8 of the operating plan a

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list of solid waste reports required to be filed with NHDES and/or other entities such as the host solid waste district.

- Appendices – NHDES briefly reviewed the appendices and takes no exception.

To ensure NHDES has a complete copy of the approved operating plan, the permit requires the permittee to submit the approved operating plan of record, with the changes noted as required herein, and with all pages oriented upright and sections bookmarked.

Env-Sw 1105.12 Interaction with Districts – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See also review of Env-Sw 1105.11(d)(8) above. No further evaluation undertaken.

Env-Sw 1105.13 Annual Report for Active Facilities, Content – Applicable – Operational requirement to be implemented and enforced as a condition of any approval granted. See also review of Env-Sw 1105.11(d)(8) above. No further evaluation undertaken.

Env-Sw 1105.14 Annual Report for Inactive Facilities, Content – Not applicable

Env-Sw 1106 ADDITIONAL CLOSURE REQUIREMENTS

Evaluation of closure requirements is based on preliminary plans. Final closure plans require NHDES approval.

Env-Sw 1106.01 Commencement of Closure Activities – Applicable – Closure requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1106.02 Notice of Intent to Close – Applicable – Closure requirements to be implemented and enforced. No evaluation undertaken.

Env-Sw 1106.03 Basic Facility Closure Requirements – Applicable – Closure requirements to be implemented and enforced as a condition of any approval granted. No evaluation undertaken.

Env-Sw 1106.04 Closure Plan Content and Format

NHDES notes that not all changes in the closure plan were redlined or otherwise highlighted; therefore, the entire closure plan is subject to review. The proposed closure plan is compared to the Approved Closure Plan of Record, dated August 2014, and approved by permit modification dated August 15, 2014, and inclusive of Revised Drawing Sheets C2 and C3 (WMD Doc Log #15625) approved by permit modification dated July 9, 2015.

- 1106.04(a) – Applicable – Closure requirements to be implemented and enforced as a condition of any approval granted.
- 1106.04(b) – Applicable – Plan is preliminary; final plan requires approval by NHDES. Satisfies requirement.
- 1106.04(c) – Applicable – Satisfies requirement.
- 1106.04(d) – Applicable – Satisfies requirement.
- 1106.04(e) – Applicable
 - (1) Section 1, Facility Identification – Applicable – Satisfies requirement.
 - (2) Section 2, Closure Schedule – Applicable – Preliminary closure schedule provided. Schedule does not address when capping will occur. **Partially satisfies requirement.**

To ensure timely capping of the facility, the permit requires the permittee cap the facility consistent

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with the fill sequencing plans received March 2020, and entitled, “Stage VI Facility Sequencing Plans.”

- (3) Section 3, Waste Identification – Applicable – Satisfies requirement.
- (4) Section 4, Notifications – Applicable – Satisfies requirement.
- (5) Section 5, Closure Requirements – Applicable
 - a. List of each major closure work task is included in Section 2.0. Satisfies requirement.
 - b. A description of procedures is provided. Satisfies requirement.
 - c. Design plans are included in Attachment A – to be updated consistent with review in Env-Sw 800. Technical specifications are included on the drawings and in Attachment C. Plans do not meet all requirements of Env-Sw 1103.05 – elevations are missing. See review of Env-Sw 1103.05. Plans are preliminary.
- (6) Section 6, Post-Closure Requirements – Applicable – Plan is preliminary. Satisfies requirement.
- (7) Section 7, Recordkeeping and Reporting – Applicable – Plan is preliminary. Satisfies requirement.
- (8) Section 8, Other Permits – Applicable – Additional approvals such as local approval or Alteration of Terrain approval may be required. Plan is preliminary. Satisfies requirement.
- (9) Section 9, Closure Cost Estimate – Applicable – See review of Env-Sw 1400 herein.

To ensure NHDES has a complete copy of the approved closure plan, the permit requires the permittee to submit the approved closure plan of record, with the changes noted as required herein, and with all pages oriented upright and sections bookmarked.

Env-Sw 1106.05 Temporary Cessation of Facility Construction or Operations – Not applicable

Env-Sw 1400 FINANCIAL ASSURANCE

Env-Sw 1401 PURPOSE AND APPLICABILITY – Applicable – The rules in this chapter are applicable to the subject facility.

Env-Sw 1402 DEFINITIONS – Applicable – No evaluation undertaken.

Env-Sw 1403 FINANCIAL ASSURANCE REQUIREMENTS

Env-Sw 1403.01 Financial Assurance Plan Preparation and Submittal

- 1403.01(a) – Applicable – Requirements to be implemented and enforced as a condition of any approval granted. The permittee has identified changes to the facility’s current closure cost estimate, which includes the post-closure care cost estimate, that would require the amount of financial assurance currently provided to be increased prior to obtaining operating approval of the expansion. Satisfies requirement.
- 1403.01(b) – Applicable – The permittee’s proposed financial assurance plan includes:
 - (1) Closure cost estimate – See review of Env-Sw 1403.02 herein.
 - (2) Requirements for guaranteeing cost of closure – Continued use of its current financial assurance mechanism, comprised of two insurance policies (one for closure and one for post-closure care) issued by Evergreen National Indemnity Company, and a Standby Trust Account administered by Keybank National Association. No change proposed to mechanism type. No further evaluation undertaken.
 - (3) Identity and contact information of financial institution – Information is available in facility’s financial assurance file. No change proposed to financial institution providing guarantee. No further evaluation undertaken.
 - (4) Local government financial test – Not Applicable
- 1403.01(c) – Applicable – Requirements to be implemented and enforced as a condition of any approval granted. No change proposed except an increase in the closure and post-closure cost estimates; this will require an increase in the financial assurance mechanism amounts. Permittee is seeking preliminary approval of changes

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for Stages I through VI. Satisfies requirement.

Env-Sw 1403.02 Closure Cost Estimation

- 1403.02(a) – Applicable – Revised cost estimates exceed current mechanism amounts; mechanisms must be increased via the permit modification process prior to operation of Stage VI pursuant to Env-Sw 1405. No further evaluation.
- 1403.02(b) – Applicable – Satisfies requirement.
- 1403.02(c) – Applicable – Estimate prepared for entire footprint (Stage I through VI). Satisfies requirement.
- 1403.02(d) – Not Applicable
- 1403.02(e) – Applicable – Satisfies requirement.
- 1403.02(f) – Applicable – Satisfies requirement.
- 1403.02(g)
 - (1) Applicable – Satisfies requirement.
 - (2) Applicable – Satisfies requirement.
 - (3) Not applicable
 - (4) Applicable – Satisfies requirement.
 - (5) Applicable – Satisfies requirement.
 - (6) Applicable – Stamped and signed by Adam J. Sandahl, NH P.E. No. 12544, exp. 1/31/2022. Satisfies requirement.
 - (7) Applicable – Satisfies requirement.

Env-Sw 1403.03 Financial Assurance Mechanism, All Facilities

- 1403.03 – Applicable – No changes proposed. No further evaluation undertaken.

Env-Sw 1403.04 Financial Assurance Mechanism, Public Facilities – Not applicable

Env-Sw 1403.05 Local Government Financial Test – Not Applicable

Env-Sw 200 SOLID WASTE PROGRAM: PROCEDURES

Env-Sw 202 WAIVER OF SOLID WASTE RULES

Env-Sw 202.01 Purpose – Purpose Statement. No evaluation undertaken.

Env-Sw 202.02 Procedures

- 202.02(a) – Applicable – Rule provides option for applicant to request a waiver. No further evaluation undertaken.
- 202.02(b) – Applicable – Satisfies requirement.
- 202.02(c) – Applicable – See review of Env-Sw 202.03 below.
- 202.02(d) – Applicable – Satisfies requirement.
- 202.02(e) – Applicable – Undertaken.

Env-Sw 202.03 Application Content and Formatting

- 202.03(a)
 - (1) Applicable – Satisfies requirement.
 - (2) Applicable – Satisfies requirement.
 - (3) Applicable – Waiver of Env-Sw 805.07 sought for those portions of Stage I, Phases I-III that underlie portions of proposed Stage VI. Satisfies requirement.
 - (4) Applicable – Hardship would result from either being required to excavate and install required systems or install overlay liner. Satisfies requirement.
 - (5) Applicable – No explicit alternative provided; implied alternative is no change to facility design or operations; if leak develops, pertinent section(s) will be capped. Satisfies requirement.

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- (6) Applicable – Permanent. Satisfies requirement.
- (7) Applicable – See review of Env-Sw 202.04 herein.
- (8) Applicable – See review of (b) and (c) below. Satisfies requirement.
- 202.03(b) – Applicable – Satisfies requirement.
- 202.03(c) – Not applicable.
- 202.03(d) – Applicable – Optional. Satisfies requirement.
- 202.03(e) – Applicable – Satisfies requirement.

Env-Sw 202.04 Criteria – Applicable – Considered in context with demonstrations made in previous applications for waiver (see applications for Waiver effective August 15, 2014 and Waiver effective March 1, 2013) the intent and purpose of the rule is met by the existing design. Satisfies requirements.

APPLICATION DECISION

Env-Sw 305 APPLICATION DECISIONS

- 305.01 – Applicable – Application was reviewed in accordance with Env-Sw 304.
- 305.02(c) – Applicable – Application is **approved** because NHDES has determined that the proposed activity can be conducted in compliance with applicable requirements of RSA 149-M and the Solid Waste Rules, and there are no grounds for denial in accordance with Env-Sw 305.03.

Reason/Condition for Denial	Does Condition Exist?
305.03(b)(1) Does not meet the requirements of the Rules	No
305.03(b)(2) Insufficient or ambiguous information that precludes a determination and the deficiencies are so substantial as to not be remedied by compensating terms and conditions	No
305.03(b)(3) Applicant meets criteria pursuant to RSA 149-M:9, IX ³	
RSA 149-M:9, IX(a) Person fails to demonstrate reliability, expertise, integrity, and competence to operate a SW facility	No
RSA 149-M:9, IX(b) Person has been convicted of, or pled guilty or no contest to, a felony within previous 5 years of application date	No
RSA 149-M:9, IX(c) For corporations or business entities, key personnel have been convicted of, or pled guilty or no contest to, a felony within previous 5 years of application date	No
305.03(b)(4) Has not demonstrated legal right to occupy property	No
305.03(b)(5) Notified by rivers coordinator that a proposed activity violates a protection measure under RSA 483:9, 483.9-a, 483.9-b	No
305.03(b)(6) Application is dormant	No
305.03(b)(7) Application is for a PBN or Type III permit modification and applicant is unable to provide compliance certification	No
305.03(b)(8) Application meets any other provision for denial	None known

With regards to Env-Sw 305.03(b)(2) – Those items identified during review to not meet the requirements of the Solid Waste Rules due to ambiguous or insufficient information have been remedied with compensating terms and conditions.

³ Solid Waste Management, RSA 149-M: 1-60

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- 305.02(c)(3) – Applicable – Application for a Type I-A permit modification for expansion of the landfill and waiver to certain wetlands setback requirements is **approved** and such approval is being issued in accordance with Env-Sw 305.06.

OTHER LOCAL, STATE, AND FEDERAL REQUIREMENTS

The review and conclusions presented in this permit application review summary pertain solely to solid waste requirements of RSA 149-M and Env-Sw 100 et seq. Pursuant to Env-Sw 101.02(d) and Env-Sw 305.04(b), any approval granted relative to these solid waste requirements shall not affect the applicant’s obligation to obtain all requisite federal, state or local permits, licenses or approvals, or to comply with other applicable federal, state, district or local permits, ordinances, laws or approvals or conditions pertaining to the approved activity.

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ATTACHMENT A – Public Benefit Determination

Application for Landfill Expansion— Stage VI North Country Environmental Services, Inc. (NCES) 581 Trudeau Road, Bethlehem, NH Permit No. DES-SW-SP-03-002

The New Hampshire Solid Waste Management Act, RSA 149-M, specifically RSA 149-M:11, requires that NHDES determine whether a proposed solid waste facility provides a substantial public benefit based on the three criteria in RSA 149-M:11,III(a) through (c), as follows.

- (a) The short- and long-term need for a solid waste facility of the proposed type, size, and location to provide capacity to accommodate solid waste generated within the borders of New Hampshire, which capacity need shall be identified as provided in paragraph V,
- (b) The ability of the proposed facility to assist the state in achieving the implementation of the hierarchy and goals under RSA 149-M:2 and RSA 149-M:3.
- (c) The ability of the proposed facility to assist in achieving the goals of the state solid waste management plan, and one or more solid waste management plans submitted to and approved by the department under RSA 149-M:24 and RSA 149-M:25.

Pursuant to RSA 149-M:11,VIII, the applicant for a permit must demonstrate in the application how the proposed facility satisfies the criteria in RSA 149-M,III(a) through (c). All three of the criteria must be satisfied for a proposed facility to receive a determination that it provides a substantial public benefit. If NHDES determines that the applicant has demonstrated that the proposed facility satisfies each of the three criteria listed under RSA 149-M:11,III, the department must state that determination in any permit issued (see RSA 149-M:11,X). If NHDES determines that the applicant has failed to demonstrate that the proposed facility satisfies the three criteria listed under RSA 149-M:11,III, the department must deny the application and provide a written explanation of the reasons for the determination (see RSA 149-M:11,IX).

For any proposed facility designed to accommodate in excess of 30 tons of solid waste per day, NHDES must hold a public hearing in the host municipality, and consider as part of the public benefit determination the concerns of citizens and governing bodies of the host municipality, county, and district, and other affected persons (see RSA 149-M:11,IV(a)), and the economic viability of a proposed facility, including the ability to secure financing (see RSA 149-M:11,IV(b)). See Response to Public Comment issued concurrently with this assessment.

I. **Assessment and Determination—RSA 149-M:11,III(a).**

The assessment of whether the proposed facility (Stage VI) satisfies the criteria in RSA 149-M:11,III(a), first requires identification of the state’s solid waste capacity need pursuant to RSA 149-M:11,V.

Relative to the proposed NCES landfill expansion, each of the four components of RSA 149-M:11,V is addressed as follows:

- ❖ RSA 149-M:11,V(a)--- Project, as necessary, the amount of solid waste which will be generated within the borders of New Hampshire for a 20-year planning period, assuming that all unlined landfill capacity within the state is no

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longer available to receive solid waste.

Relative to making the projection required by RSA 149-M:11,V(a), in the Application, NCES has projected the quantity of solid waste to be generated within the borders of New Hampshire, yearly from September 2020 through August 2040 (referred to as the planning period) based on a waste generation rate of 1.31 tons per capita. NCES determined the per capita waste generation rate and projected the quantity of waste to be generated yearly during the planning period, based on its analysis of 2018 solid waste management data reported to NHDES by facilities operating in New Hampshire, including recycling rates, and population and growth rate estimates from the NH Office of Energy and Planning (NH-OEP). The yearly projections are shown in Table 2 in Section VII of the Application, broken out by waste type (MSW, C&D, Other Waste, Recycling), the sum total of which corresponds to 36,981,000 tons of solid waste to be generated within the borders of New Hampshire during the 20 year planning period.

For the 20 year planning period of this decision (October 2020 through September 2040), NHDES presents alternative calculations using more recently available 2019 solid waste management data reported by New Hampshire facilities, and the methodology it applied to produce the waste disposal need projections presented in the 2019 NHDES Biennial Solid Waste Report issued in October 2019. The methodology estimates “amount of NH waste generated” based on increasing the “amount of NH waste disposed of” data reported by facilities for calendar year 2019 by 25%⁴ to account for recycling and 13.5%⁵ to account for exports, both of which are assumed to have occurred between the point of generation in NH and the point of disposal. Applying New Hampshire Office of Strategic Initiatives (NHOSI) sourced population data, NHDES estimates the waste generation rate to be 1.45 tons per capita (or about 7.9 pounds per person per day), which is greater than the rate calculated by NCES (1.31 tons per capita). Assuming the per capita waste generation rate remains the same year to year during the 20 year planning period,⁶ NHDES estimates the total quantity of solid waste to be generated within the borders of New Hampshire over the 20-year planning period (October 2020 through September 2040) to be approximately 40,444,900 tons, in contrast to the lesser amount (36,981,000 tons) projected by NCES for the same relative time period (September 2020 through August 2040).

In summary as to RSA 149-M:11,V(a), the following factors are potentially relevant to making a determination pursuant to RSA 149-M:11,III(a):

- **The projections by NCES in the Application may underestimate the total quantity of solid waste to be generated in New Hampshire during the 20-year planning period, perhaps by about 3.5 million tons based on NHDES projections for the planning period using a higher (more conservative) per capita waste generation rate.**
- **This is a factor to consider when identifying any shortfall in capacity pursuant to RSA 149-M,11,V(d) and in assessing whether, pursuant to RSA 149-M:11,VIII, the Application demonstrates the proposed expansion satisfies the criteria in RSA 149-M:11,III(a).**

❖ RSA 149-M:11,V(b)--- Identify the types of solid waste which can be managed according to each of the methods listed under RSA 149-M:3 and determine which such types will be received by the proposed facility.

⁴ Using the department’s most recent recycling rate data from 2015

⁵ Using publicly available data from 2000 through 2019, the estimate is an average plus one standard deviation over that time period.

⁶ This assumption, other assumptions, uncertainties and gaps in reported data, and other factors contribute to not being able to make an exact projection. However, NHDES believes its projection does not underestimate the quantity of waste to be generated in NH during the 2020 through 2039 planning period, and likely over estimates the amount generated.

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Relative to addressing the waste identification requirements in RSA 149-M:11,V(b):

- NCES proposes in the Application to have Stage VI receive the same types of solid waste that the existing landfill is permitted to receive, namely: MSW, C&D, and various special wastes (e.g., industrial processes waste including wastewater treatment sludge and air pollution control wastes, remediation wastes, contaminated soils and media, off-specification materials, incinerator ash, treated infectious waste).
- NCES does not propose in the Application to receive in Stage VI any type of solid waste that the existing landfill is prohibited from receiving, namely asbestos waste and waste that is banned or otherwise prohibited from landfilling pursuant to Env-Sw 806.12 and RSA 149-M. These wastes include untreated infectious wastes; leaf and yard waste; contained gaseous wastes; liquid wastes; wet cell batteries; video display devices, central processing units, and non-mobile video display devices; mercuric oxide batteries; and mercury added products.
- NCES does not propose in the application to manage waste received at the proposed facility by any method on the hierarchy other than landfilling.
- NHDES notes that the types of solid wastes banned from landfilling, which are not proposed for acceptance by NCES, can be and are managed by others using one or more of the methods higher on the hierarchy identified in RSA 149-M:3.
- NHDES notes that various components of waste classified as MSW and C&D, which NCES proposes to accept for disposal, can be and are managed by others using one or more methods higher on the hierarchy in RSA 149-M:3.
- NHDES notes that incinerator ash, certain contaminated soils, and certain other special wastes, which NCES proposes to accept for disposal, may not at this time be practicably managed by methods other than landfilling.

In summary as to RSA 149-M:11,V(b), the following factors are potentially relevant to making a determination pursuant to RSA 149-M:11,III(a):

- **The Application presents no proposed changes to current management practices of any type of solid waste to be received by the proposed facility.**
- **Therefore, there is nothing new or unique proposed relative to the hierarchy in RSA 149-M:3 to be factored into assessing the short and long-term need for NCES landfill capacity in New Hampshire to accommodate solid waste generated in New Hampshire pursuant to RSA 149-M:11,III(a).**

❖ RSA 149-M:11,V(c)---Identify, according to type of solid waste received, all permitted facilities operating in the state on the date of the determination.

Relative to addressing the requirement in RSA 149-M:11,V(c), NCES identified in Section VII of the application (page 5; Part 3.2.3) the existence of six lined landfills, one waste-to-energy (WTE) facility, and two C&D processing facilities operating in the state. In Table 3 of Section VII of the application (page not numbered), NCES provided a listing of the types of solid waste each of the six lined landfills are authorized to receive.

To augment the information provided by NCES, NHDES provides in the table below similar information for five of the state's operating lined landfills (not including NCES) with additional information in the last column showing waste types NCES is authorized to receive but the designated facility cannot receive.

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Landfill	Location	Service Type	Authorized Waste Types	NCES Authorized Waste Prohibited at Subject Landfill
Lower Mount Washington Valley Secure Solid Waste Landfill	Conway, NH	Limited	Solid waste, ⁷ WWTP sludge from N. Conway Water Precinct, ⁸ MSW, C&D ⁹	Treated infectious waste, Incinerator ash, Other sludge, Contaminated soils and media
Lebanon Regional Solid Waste Facility	Lebanon, NH	Limited	MSW, C&D, Bulky waste, ¹⁰ WWTP sludge from Lebanon, ¹¹ WWTP grit/grease/screenings, ¹² Treated infectious waste ¹³	Other sludge, Contaminated soils and media, ash
Four Hills Secure Landfill Expansion	Nashua, NH	Limited	MSW, C&D, asbestos, ¹⁴ bulky waste, street sweepings, WWTP sludge/grit/grease ^{15,16}	Contaminated soils and media, ash
TLR-III Refuse Disposal Facility	Rochester, NH	Unlimited	MSW, C&D, bulky wastes, incinerator ash, asbestos, special wastes (e.g., sludge, industrial process waste, pollution control processes waste, remediation waste, contaminated soils and media, off-specification materials, treated infectious waste, bulked liquid waste)	None
Mount Carberry Secure Landfill	Success, NH	Unlimited	MSW, C&D, auto shredder and metal shredder residue, bulky waste, WWTP sludge, asbestos, treated infectious waste, incinerator ash, contaminated soils and media, mill wastes (i.e., MSW, ash, grit, lime, WWTP sludge) ¹⁷	None

In summary as to RSA 149-M:11,V(c), the following factors are potentially relevant to making a determination pursuant to RSA 149-M:11,III(a):

- The Application presents no proposed changes to the above noted existing disposal options for solid waste generated within the borders of New Hampshire, and all of the waste types received at the NCES landfill can also be received by other unlimited service area operating landfills in New Hampshire.
- Therefore, there is nothing new or unique proposed relative to waste types managed at the facility to be factored into assessing the short and long-term need for NCES landfill capacity in New Hampshire to accommodate solid waste generated in New Hampshire pursuant to RSA 149-M:11,III(a).

❖ RSA 149-M:11,V(d)---Identify any shortfall in the capacity of existing facilities to accommodate the type of solid waste to be received at the proposed facility for 20 years from the date a determination is made under this section. If such a shortfall is identified, a capacity need for the proposed type of facility shall be deemed to exist to the extent that the proposed facility satisfies that need.

⁷ NHDES. Authorization to Manage Solid Waste, Permit No. DES-SW-90-028. Approved October 22, 1990.

⁸ NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved July 12, 1995.

⁹ CMA Engineers, Inc. Lower Mount Washington Valley Secure Solid Waste Landfill: Facility Operating Plan. Dated November 2012.

¹⁰ NHDES. Solid Waste Management Facility Standard Permit. Approved March 19, 1999.

¹¹ NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved August 9, 2000.

¹² NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved December 20, 1999.

¹³ City of Lebanon. Operating Plan: Phase II Secure Expansion. Revised April 2013.

¹⁴ NHDES. Solid Waste Management Facility Standard Permit. Approved June 26, 1995.

¹⁵ City of Nashua. Operating Plan: Phase II Secure Landfill Expansion. Revised June 2013.

¹⁶ NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved February 7, 2003.

¹⁷ NHDES. Record of Modification to Solid Waste Management Facility Permit. Approved February 25, 2019.

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Relative to addressing the requirement in RSA 149-M:11,V(d), NCES asserts in Part 3.2.4 of Section VII of the application, the existence of a lump sum shortfall in disposal capacity ranging from 3,009,883 tons to 17,416,542 tons during their assumed 20-year planning period (September 2020 through August 2040). The range depends on whether the state’s existing disposal capacity is figured on the basis of “operating disposal capacity” or “permitted disposal capacity.” NCES identifies “operating disposal capacity” as that capacity currently in operation, and “permitted disposal capacity” as that capacity which has received a permit from NHDES but may not yet have final approval to construct or operate. Table 4 in Section VII of the Application presents NCES’ disposal capacity numbers used to make the shortfall calculations, with related notes documenting the underlying methods and assumptions used by NCES to produce its estimates. The capacity shortfall calculated by NCES is figured by subtracting 27,050,000 tons (from Table 2, i.e., the total quantity of solid waste NCES projected to be generated within the borders of New Hampshire less the quantity anticipated by NCES to be diverted from disposal during the 20-year planning period) from, first, the state’s “operating disposal capacity” (9,633,458 tons) and, second, the state’s “permitted disposal capacity” (24,040,117 tons) for the same time period, using the capacity figures presented at the bottom of Table 4. This produces the estimated shortfall of 3,009,883 tons to 17,416,542 tons, in aggregate during the 20 year planning period.

NHDES made alternative calculations and estimated the state’s lump sum permitted disposal capacity at incinerators and lined landfills to be about 22,752,200 tons for the 20 year planning period (October 2020 through September 2040), which is about 5.34 million tons more than NCES has estimated.¹⁸

While NCES did not provide projections or an analysis of capacity shortfall as a function of time over the 20 year planning period, NHDES independently evaluated the state’s permitted disposal capacity as a function of time, to identify any resultant shortfalls as a function of time over the 20-year planning period. Examining capacity need as a function of time is important because RSA 149-M:11,III(a) requires NHDES to examine both “the short- and long-term need for a solid waste facility...which capacity need shall be identified as provided in paragraph V” and the provisions of paragraph V, specifically RSA 149-M:11,V(d), state that if a shortfall in capacity is identified, a capacity need for the proposed type of facility shall be deemed to exist “... to the extent that the proposed facility satisfies that need.” (Emphasis added)

To project permitted disposal capacity as a function of time, NHDES used the allowable capacity depletion rates specified in the permits issued for the landfills, and other operational information for each of the state’s existing disposal facilities, as summarized below.¹⁹

- Wheelabrator Concord Co. (Concord) – Disposal capacity of the WTE is the facility’s effective disposal capacity, based on the permitted throughput capacity (575 tpd, 365 days per year) reduced by the quantity of ash requiring final disposal (approx. 30% ash disposal rate). Its assumed operating life expectancy includes the entire 20 year planning period.

¹⁸ NHDES notes that the estimates made by NHDES and NCES appear to rely on different compaction density factors and allowable capacity depletion rates, resulting in different permitted capacity projections.

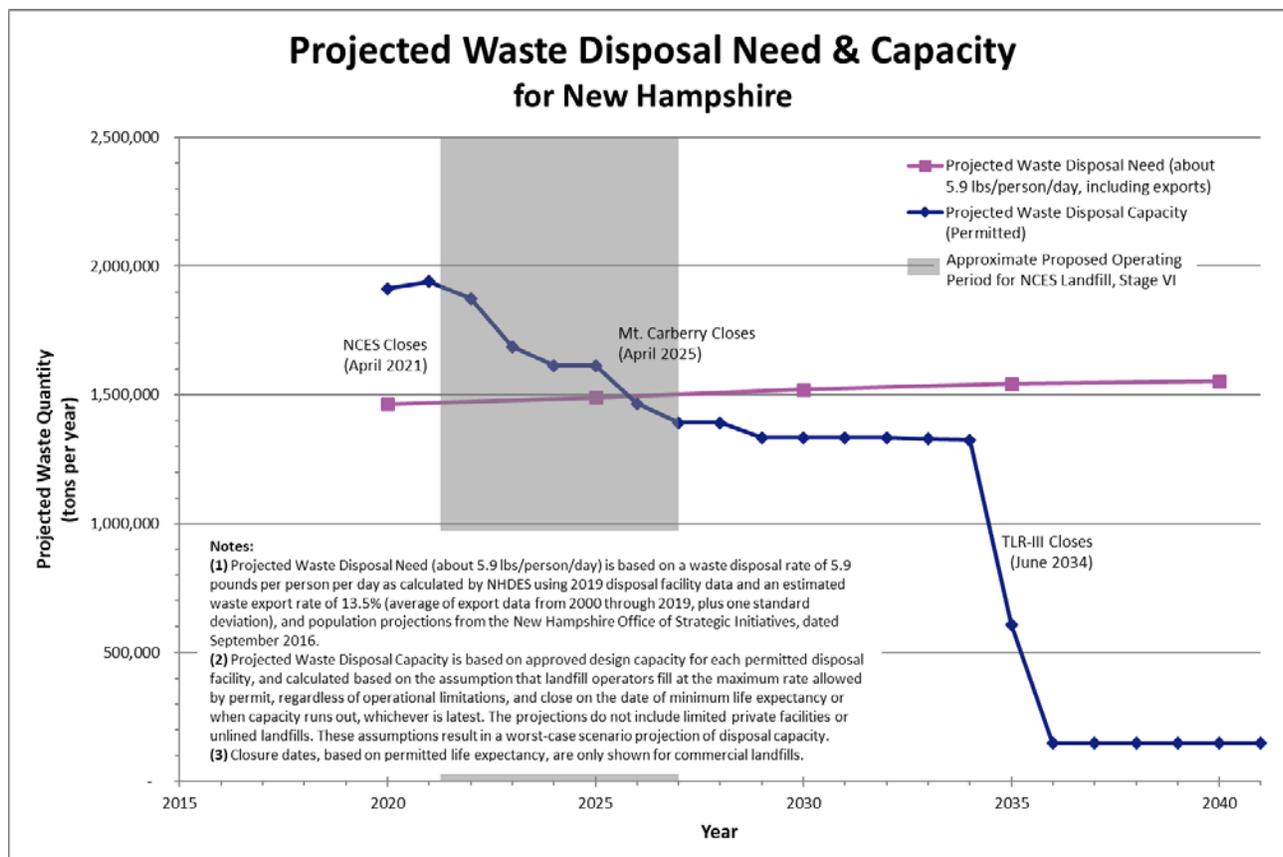
¹⁹ NHDES notes that its analysis does not include the effective capacity for permitted processing/treatment facilities, other than Wheelabrator-Concord Co., which results in under estimating permitted capacity for some waste types such as C&D and contaminated soils, and therefore over estimating capacity shortfall to some degree.

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- NCES Landfill (Bethlehem) – Life expectancy is through April 16, 2021 (Permit modification dated 8/15/14 requires 5.3 years of operation; operations started December 28, 2015 pursuant to the December 2015 monthly report). Annual tonnage is based on the estimated remaining permitted capacity reported to NHDES by NCEs in the facility’s 2019 Annual Facility Report, the permitted minimum life expectancy, and a facility-specific compaction rate of 1,520 lbs/cy as provided in the public benefit determination included in the Application.
- Lower Mount Washington Valley Secure Solid Waste Landfill (Conway) – Permit contains neither an annual tonnage limit nor a minimum life expectancy. The application for a permit included a projected disposal rate of 10,000 tpy. Life expectancy is estimated based on filling at a rate of 10,000 tpy, and an assumed compaction rate of 1,200 lbs/cy.
- Lebanon Regional Solid Waste Facility (Lebanon) – Permit contains no annual tonnage limit or minimum life expectancy. Annual tonnage is estimated based on the remaining capacity and life expectancy identified in the 2019 annual facility report, and a compaction rate of 1,400 lbs/cy (rounded) as stated in the facility’s capacity report dated June 1, 2017.
- Four Hills Landfill Expansion (Nashua) – Permit contains no annual tonnage limit but does set a life expectancy of 20 years, or until April 2023 (Permit dated 6/26/95 requires 20 years of operation; operations began April 15, 2003). Annual tonnage is based on the minimum permitted life expectancy, estimated remaining permitted capacity and a facility-specific compaction rate of 1,220 lbs/cy as provided in the remaining waste capacity evaluation dated August 20, 2020.
- TLR-III Refuse Disposal Facility (Rochester) – Permitted life expectancy is through June 30, 2034 (Permit modification issued 6/11/2018). Annual tonnage is based on the permitted capacity through Phase 17, and a facility-specific compaction rate of 1,570 lbs/cy (rounded) reported in the 2019 annual facility report.
- Mt. Carberry Secure Landfill (Success/Berlin) – Permitted life expectancy is through April 2025 (Permit modification dated 2/25/2019). Annual tonnage is based on the permitted capacity through Stage 12, and a compaction rate of 1,450 lbs/cy (rounded) as stated in the capacity report dated December 19, 2018.

Based on the above, NHDES’ projections of disposal need and disposal capacity at incinerators and lined landfills over time is shown in the following graph. During the proposed operating life of Stage VI, the graph shows that approximately one year of Stage VI operating life would overlap a time period of disposal need.

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NCES did not project disposal capacity and capacity need as a function of time during the 20-year planning period. Further, NCES made conflicting statements in its application regarding the projected life expectancy of Stage VI. NCES asserts variably that Stage VI will operate at an annual acceptance rate of 175,000 tons per year, and for 5.3 years, and through December 31, 2026. The assertions are not in harmony. NHDES projects that, at an annual acceptance rate of 175,000 tons per year, using a conversion factor of 1,520 lbs/cy, the facility would reach capacity in September 2026, not December 31, 2026. Alternatively, if the Stage VI lifespan is simply measured as 5.3 years from April 16, 2021 (end of Stage V capacity requirement), the facility would reach capacity in August 2026, not December 31 2026. Therefore, for purposes of this evaluation, NHDES assumed that the facility would operate through December 31, 2026, based on the commitment expressed by NCES in the application. This is the date that provides disposal capacity furthest into the time of capacity need.

In summary as to RSA 149-M:11,V(d), the following factors are potentially relevant to making a determination pursuant to RSA 149-M:11,III(a):

- During the 20-year planning period, there is a projected shortfall in existing permitted disposal capacity to accommodate the total quantity of New Hampshire waste projected to be generated statewide during that time period (October 2020 through September 2040). In this analysis, the projected magnitude of the shortfall differs depending on whether NCES or NHDES waste generation projections are used to make the calculation. NHDES projections produce a more conservative outcome, i.e., a greater shortfall than projected by NCES in the Application.

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- A statewide shortfall in existing permitted disposal capacity is conservatively projected by NHDES to not occur until after 2025. NCES did not make a time based projection in the Application.
- The proposed facility would provide disposal capacity for NH generated waste during a time period that the data show the state has excess disposal capacity, as well as a time period when the state has a disposal capacity shortfall.

Therefore, in conclusion pursuant to RSA 149-M:11,V(d), NHDES has determined that a capacity shortfall exists during the planning period for the proposed type of facility (i.e., landfill), which is satisfied by the proposed facility for one year based on the applicant’s commitment to operate the facility through December 31, 2026. Thus, the proposed facility satisfies a need for disposal capacity within the planning period.

Returning, then, to the assessment and determination required of NHDES pursuant to RSA 149-M:11,III(a), the department must determine whether there is a “...short- and long-term need for a solid waste facility of the proposed type, size, and location to provide capacity to accommodate solid waste generated within the borders of New Hampshire, which capacity need shall be identified as provided in paragraph V.”

The type, size, and location of the facility for which this determination is made, is as follows:

Facility Type: Lined solid waste landfill, with an unlimited service area;

Size: New Footprint = Approximately 5.71 acres;
Capacity = 1,241,000 cubic yards or roughly 943,000 tons;
Fill rate = 175,000 tons per year, operating through December 31, 2026.

Location: Bethlehem, NH

To summarize, NCES seeks a permit for new landfill capacity to be operated during a period of time that the state initially has excess permitted disposal capacity and extending for one year into the period of time that the state is projected to have disposal capacity need. NCES proposes to decrease its disposal rate compared to the facility’s current waste disposal rate in Stage V, and accept no more than 175,000 tons per year.

Determination re—RSA 149-M:11,III(a): NHDES finds that the proposed facility – a landfill in Bethlehem, NH operating at a rate of not more than 175,000 tons per year through December 31, 2026, providing about 943,000 tons of capacity during a time period that the state is projected to have a disposal capacity need – meets the criterion in RSA 149-M:11,III(a).

To ensure that capacity provided by the expansion remains available to satisfy the capacity need, NHDES has established permit conditions that limit the maximum airspace usage to 230,200 cubic yards per year and that require the facility to remain operational through December 31, 2026 (see Condition (27)). Adjustments to the facility’s design required by the permit as noted in Condition (30) of the permit modification may reduce the total capacity of the facility by an undetermined volume, creating uncertainty in the annual allowable airspace usage while maintaining compliance with facility life expectancy (December 31, 2026) and this public benefit determination. To that end, NHDES has granted 230,200 cubic yards of airspace use per year (as requested by NCES at 175,000 tons per year converted using NCES’ conversion rate presented in the application of 1,520 lbs/cy); however, NHDES has set the 230,200 cubic yards per year as the maximum airspace usage permitted and does not allow for averaging year-to-year. Additionally, the permit requires the facility to operate ---regardless of any design capacity reduction---through at least December 31, 2026 and preserving for use during calendar year 2026, no less than 150,000 cubic yards of capacity.

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II. Assessment and Determination---RSA 149-M:11, III(b).

RSA 149-M:11,III(b) specifies the second of the three public benefit criterion, namely the “*Ability of the proposed facility to assist the State in achieving the implementation of the hierarchy and goals under RSA 149-M:2 and RSA 149-M:3.*”

In its demonstration of public benefit in Section VII of the Application, NCES states that the 40% waste reduction goal in RSA 149-M:2 has lapsed, as it was set to occur by 2000; therefore, NCES asserts that there is nothing it can do to assist in achieving the goal. Instead, NCES seeks to answer two inquiries relative to RSA 149-M:3 (i.e., waste hierarchy): “(1) whether the proposed facility is part of an integrated set of solid waste disposal solutions providing safe and economical waste management and (2) whether the integrated set of solutions of which the facility is a part is consistent with the hierarchy.” (Section VII, p. 14)

NCES states that NCES, in coordination with Casella Waste Systems, Inc. and its affiliates, are part of an integrated system, and provides a number of examples regarding source reduction and interception, recycling and reuse, composting, a future waste-to-energy project, and a food waste-to-energy conversion project.

The Application does not propose any change in current landfilling practices at the facility that would specifically advance the hierarchy or diversion of waste from landfilling.

Landfilling is the least preferred method of solid waste management in the hierarchy described in RSA 149-M:3, and landfilling does not, by itself, support waste diversion as identified in RSA 149-M:2. NCES asserts that the NCES landfill (to include services provided by Casella and its affiliates) is part of an integrated solid waste management system.

Determination re- RSA 149-M:11,III(b): Based on a review of NCES’ public benefit demonstration, NHDES finds that the proposed expansion provides disposal capacity, as part of an integrated solid waste management system, which supports the goals and hierarchy under RSA 149-M:2 and RSA 149-M:3. For example, the landfill provides disposal capacity for wastes for which there are no, or limited, alternative management methods available in New Hampshire.

To assure the permittee operates the facility in accordance with this determination, NHDES has placed conditions in the facility’s permit to ensure that operation of the landfill will assist the state in achieving the implementation of the hierarchy and goals under RSA 149-M:2 and RSA 149-M:3. For example, Condition (27)(d) of the permit modification relates to improving waste diversion. In addition, Condition (27)(e) requires NCES to, yearly, assist no fewer than 10 solid waste generators, at least 5 of which must be NH municipalities, with improving waste management practices consistent with the hierarchy and goals. It is the intention of NHDES that over the additional operating life of the facility, this provision will enable at least 25 NH municipalities that currently rely on landfilling, to obtain the assistance they need to move toward more sustainable waste management practices that can reduce their dependency on landfilling long-term.

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Note: In Condition (27)(d), NHDES has intentionally limited the diversion requirement to MSW and C&D wastes because these waste streams, as defined, have viable and therefore achievable diversion options higher on the solid waste management hierarchy than landfilling. However, there may be some sub-types of MSW and C&D debris wastes for which environmentally safe and economically sound alternatives to landfilling are limited (e.g., sludges, off-specification commercial products). As provided in Condition (27)(d)2, NCES may propose to exclude certain sub types of MSW and C&D waste from the diversion calculation.

III. Assessment and Determination---RSA 149-M:11,III(c).

RSA 149-M:11,III(c) establishes the third and last criterion that must be satisfied in order to demonstrate a public benefit, namely the “Ability of the proposed facility to assist in achieving the goals of the State solid waste management plan, and one or more solid waste management plans submitted to and approved by the department under RSA 149-M:24 and RSA 149-M:25.”

In the Application, NCES states that the proposed facility assists in achieving the five below stated goals of the State of New Hampshire Solid Waste Plan, dated April 2003, as follows:

1. Reduce the volume of the solid waste stream – NCES uses alternative daily cover (C&D chips mixed with soil), and provides an outlet for C&D processing residual wastes. Casella affiliates support pay-as-you-throw programs, and Casella Organics creates waste-derived products from wood ash for agricultural and animal bedding purposes. NCES operates a transfer station in Bethlehem, that includes recycling and diversion of waste in its operations.
2. Reduce the toxicity of the solid waste stream – NCES and its affiliates operate transfer stations that provide alternative options for managing universal waste and other wastes prohibited from landfilling. Additionally, NCES and Casella host household hazardous waste collection days.
3. Maximize diversion of residential and commercial/industrial solid wastes – NCES and its affiliates offer recycling services, and convert biosolids to beneficial use (in composting and/or for land application).
4. Assure disposal capacity for New Hampshire – NCES states that the proposed Stage VI will mitigate a shortfall in disposal capacity over the 20-year planning period, and further asserts that over 70% of the capacity of Stage VI will be used to accommodate New Hampshire waste (Section VII, page 30).
5. Assure that solid waste management activities are conducted in a manner protective of human health and the environment – NCES asserts that proposed Stage VI is designed to meet or exceed regulatory requirements, will be operated by trained personnel, and will be monitored in accordance with relevant regulations.

With regard to District plans, NCES states that it provides disposal services to New Hampshire municipalities and solid waste districts. NCES did not identify a particular goal of any one plan that the proposed expansion would assist in achieving, but did identify that the NCES landfill is explicitly identified as a disposal facility in solid waste management planning documents for multiple single and multi-town solid waste districts.

The Application does not propose any change in current landfilling practices at the facility, that might change current solid waste management practices in New Hampshire relative to achieving state and district solid waste management planning goals.

Determination re- RSA 149-M:11,III(c):

Application Review Summary			
Facility	NCES Landfill	Reviewed by	Jaime M. Colby, P.E
Location	581 Trudeau Road, Bethlehem, NH	Checked by	Pamela Hoyt-Denison, P.E.
Permit No.	DES-SW-SP-03-002	Review Date	Completed October 9, 2020
Application	Type I-A Modification – Landfill Expansion (Stage VI resubmittal)	Application No.	2020-47865 Page 47 of 48

Based on a review of NCES’ public benefit demonstration, NHDES finds that the integrated services provided by NCES and its affiliates assist the state in achieving the goals of the State solid waste management plan. Further, NCES provides disposal services to New Hampshire municipalities and solid waste districts; as such, NHDES finds that the integrated system of the NCES landfill and its affiliates assist New Hampshire municipalities and districts with meeting their solid waste management planning requirements.

NHDES has placed conditions in the facility’s permit to ensure that during operation of the landfill the permittee will continue to assist the state in achieving the implementation of the hierarchy and goals of the State solid waste management plan as well as district plans.

Specifically, as also noted above, Condition (27)(e) requires the permittee to assist at least 10 New Hampshire solid waste generators, inclusive of at least 5 municipalities, per year with establishing or improving programs that assist in the implementation of the goals and hierarchy under RSA 149-M:2 and M:3. NHDES based the number of generators to be assisted on the applicant’s proposal (Section VII, page 18) and adds specificity regarding assistance to NH municipalities based on public comments and concerns. It is the expectation of NHDES that the assistance provided will make a measurable reduction in how much waste the generators manage by landfilling.

IV. Determination – RSA 149-M:11,III

Based on the information provided and the projected disposal capacity needs and shortfalls for New Hampshire generators, NHDES finds that the proposed facility provides a substantial public benefit based on the criteria specified in RSA 149-M:11,III, subject to Condition (27) of the permit modification. To maintain status as providing a substantial public benefit, NCES must comply with the public benefit requirements of the permit and discuss how it satisfied public benefit in its annual facility reports pursuant to Env-Sw 1105.13(k).

V. Assessment and Determination—RSA 149-M:11,IV(a).

RSA 149-M:11,IV(a) states “*The department shall also consider as part of its public benefit determination: The concerns of the citizens and governing bodies of the host municipality, county, and district and other affected persons. For any proposed solid waste facility, including transfer stations, designed to accommodate in excess of 30 tons of solid waste per day, the department shall hold at least one public hearing in the host municipality, or in the case of an unincorporated town or unorganized place in the host county, in order to take testimony to identify those concerns.*”

NHDES hosted a public hearing, inclusive of a public comment period, as described in this Application Review Summary under the section entitled, “Public Hearing and Comment Process.” Public comments and NHDES’ response to public comments are summarized under separate cover.

NHDES Assessment & Determination---RSA 149-M:11,IV(a)

NHDES held a public hearing and accepted public comments regarding this application. See Response to Public Comments issued concurrently with this document and the permit modification. In making its public benefit determination and stating such in the permit as required by RSA 149-M:11,X, NHDES considered the public comments received. Many of the concerns expressed by commenters helped form the conditions of this permit

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modification relevant to the permittee’s requirements for providing a public benefit. NHDES fulfilled the requirement of RSA 149-M:11, IV(a) for this application.

VI. Assessment and Determination—RSA 149-M:11,IV(b)

RSA 149-M:11,IV(b) states *“The department shall also consider as part of its public benefit determination: The economic viability of the proposed facility, including but not limited to, its ability to secure financing.”*

The applicant provided the closure cost and post-closure cost estimates as required. NHDES has on file the financial assurance mechanism used to ensure that funds exist to close the facility and perform post-closure care. In addition, NHDES has no information to suggest that the facility would be unable to secure financing for construction or operations.

NHDES Assessment & Determination—RSA 149-M:11,IV(b)

Based on a review of the information provided and available in the facility file, NHDES believes that the permittee has the financial resources necessary to continue operating the facility inclusive of Stage VI, close the facility (Stages I through VI), and maintain the facility after closure.

-- END OF REVIEW --