



**December 2, 2024**

**To:** Town of Dalton Selectmen  
Dalton Conservation Commission  
756 Dalton Road  
Dalton, NH 03598

**RE: Review of Casella Waste Systems Operations at NCES Landfill, Bethlehem, N.H.**

This report is prepared at your request and is based on a review of emails, regulatory documents, reports, and memoranda issued by Casella Waste Systems regarding their operations and site conditions at the Bethlehem, New Hampshire, waste collection facility referred to as the NCES Landfill. The facility has been in operation for 35 years and is built upon an older waste collection site (Sanco Landfill), which was excavated and relocated into the first phase of waste disposal into the new facility, with the excavated former unlined landfill capped beneath it. The landfill has experienced leachate leakage for many years and is being tracked using vapor (gas vent well) and groundwater monitoring wells. Such a condition is potentially harmful to the environment, as the site is within the watershed of, and upgradient of, the Ammonoosuc River; although direct river contamination has not been detected to date, it's an environmental disaster waiting to happen. The site's location is of great concern to the Dalton Conservation Commission, as Forest Lake lies within 2,000 feet of the proposed Granite State Landfill facility, also upgradient of the Ammonoosuc River, and owned and operated by Casella Waste Systems, Inc.

According to the documents reviewed (see references below), two interrelated and complicated issues have persisted at the NCES landfill for the past several years. These include the following:

- Excess groundwater head to the liner, resulting in damage to the anchor trench at NCES in Stage VI Phase II. This involved placing scrim over the northern 2/3 of the stage in order to prevent stormwater from entering the liner system. According to the incident report submitted by NCES, dated September 6, 2024, increased leachate flows into the secondary liner system were attributed to a perforation of the overliner in Stage IV Phase I by the installation of landfill gas wells over a ten-year period. Although no leachate has been reported to have escaped into the environment, the increased fluid levels in the secondary system exceeded action levels for the system, though remaining within the capacity of the pump and storage system to manage the leachate. Even so,

heavy rains in 2023 made it necessary to both install a surface flow-resistant scrim to the landfill and to arrange for and ship leachate off-site to wastewater treatment facilities further away in Madison, ME, and Passaic, NJ.

- In a study conducted by Calnex Environmental in March 2024, to assess the source of PFAS chemicals found in groundwater downgradient of the NCES Landfill, observations have been that PFAS compounds were escaping the landfill to the northwest towards the Ammonoosuc River. The landfill lies on top of an older unlined landfill (Sanco Landfill), and it was of concern that PFAS compounds were being released from the older, unlined landfill, atop which the newer, double-lined landfill was built, as has been suggested by the NCES engineering firm, Sanborn Head.

Two stages of leachate contamination in the downgradient monitoring well array were identified through water chemistry records of the groundwater monitoring wells. The Sanco landfill was excavated before construction of the newer NCES site, and a pulse of leachate-contaminated water was observed to pass downgradient but returned to background levels by 2000. A second release event occurred in or around 2012 and was clearly from the newer NCES operations. Since sodium bromide was added to the waste deposited in post-1996 Stage II and III of the NCES cells and bromine has been detected in wells outside the landfill, it appears most likely that the PFAS detected in the downgradient monitoring wells is also emanating from the landfill.

It is apparent that the NCES landfill is leaking contaminants into the environment and that the site conditions are compromised by liner piercings, which need repair. The presence of PFAS chemicals in the waste stream and downgradient monitoring wells is alarming, as no pathway through the landfill has been identified at this point in time, although contaminants are known to be escaping the landfill system.

As can be seen through the historical management of the Bethlehem landfill, Casella Waste Systems, Inc., is in no position to guarantee that the newly proposed Granite State Landfill facility being planned adjacent to Forest Lake State Park in the Town of Dalton and also upgradient of the Ammonoosuc River, will not leak.

Placing such a precarious landfill system in an area of a bedrock aquifer with a known fracture system that has not been mapped is a recipe for disaster. This includes the fact that the applicant and developer, Granite State Landfill LLC, a subsidiary of Casella Waste Systems, does not know how the bedrock aquifer system

works within the proposed landfill area. In addition to the unknown bedrock aquifer system, the shallow groundwater conditions in the area would be enough on its own to nix such a proposed landfill development.

All the above concerns should be enough evidence to deny the applications for the proposed Granit State Landfill development in Dalton, next to Forest Lake and the state park.

**Respectfully submitted,**

**EARTH FORENSICS, Inc.**

Executed this 2<sup>nd</sup> day of December 2024, at Santa Ana, California



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### **Leachate References**

*Casella.com, August 30, 2024. Attachment A-7 – Activities Completed/Planned Status-NCES. (Updated replacement document).*

*New Hampshire Department of Environmental Services, August 30, 2024: Email Action Item Memorandum regarding NCES Compliance with DES submittals of 6/24/2024 and 7/15/2024.*

*New Hampshire Department of Environmental Services, September 6, 2024. Incident Report Form for Solid Waste Management Facilities -NCES.*

*Sanborn Head and Assoc., September 2024: .2024 Summary of Water Quality Monitoring Results and Submittal of July 2024 Monitoring results: North Country Environmental Services, Inc.*

*Verdantas LLC. October 11, 2024: Attachment A-6 Mass Balance Analysis, North County Environmental Services, Inc. Landfill. With several other attachments topically similar.*

### **PFAS References**

*Calex Environmental Consulting. March 22, 2024: Hydrogeological opinion, Release Events at the NCES Landfill Site, Bethlehem, New Hampshire.*

## References

- Casella Waste Systems, Inc., B.H. Keith Associates, CMA Engineers, Inc., Horizon Engineering, Inc., Normandeau Associates, Inc. Sanborn, Head and Associates, inc., and Victoria Bunker, Inc. December 2023. Standard Dredge and Fill Wetland Permit Application Granite State Landfill, Dalton, New Hampshire, Sections 9.1- 9.3.*
- Calex Environmental Consulting, February 12, 2024. Hydrogeological Comments Standard Solid Waste Permit Application-October 2023 Granite State Landfill, Dalton and Bethlehem, New Hampshire. 10 p.*
- Flanagan, Sarah M., 1996. Geohydrology and Water Quality of Stratified-Drift Aquifers in the Middle Connecticut River Basin, West-Central New Hampshire. U.S. Geological Survey Water-Resources Investigations Report 94-4181, 229 p.*
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- Kron, Nicole, June 5, 2019. State vs Federal CCR Rule Regulations: Comparisons and Impacts. SCS Environmental Consultants and Contractors White Paper 11 p.*  
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- Lyons, J.B., Bothner, W.A., Moench, R.H., and Thompson, J.B., Jr., 1997. Bedrock Geologic Map of New Hampshire U. S. Geological Survey State Geology Map, 2 sheets, scale 1:250,000.*
- Watershed to Wildlife, Inc. and North Country Council, Inc. September 2006. Functional Assessment of Wetlands throughout Dalton, NH. Town of Dalton-Dalton Conservation Commission, 21 p.*