The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Robert R. Scott, Commissioner

EMAIL ONLY

September 18, 2023

John Gay
Casella Waste Management, Inc.
1855 VT Route 100
Hyde Park, VT 05655

Subject: Bethlehem – North Country Environmental Services (NCES) Landfill
581 Trudeau Road, DES Site #198704033, Project #1737

Revised Application for Renewal Groundwater Management and Release Detection Permit, prepared by Sanborn, Head & Associates, Inc. (SHA), dated April 18, 2023

April 2023 Tri-Annual Water Quality Monitoring Results, prepared by SHA, dated May 31, 2023

November 2022 Water Quality Monitoring Results, prepared by SHA, dated January 5, 2023

July 2022 Tri-Annual/2022 Annual Water Quality Monitoring Results, prepared by SHA, dated September 6, 2022

Dear John Gay:

Please find enclosed Groundwater Management and Release Detection Permit Number **GWP-198704033-B-008**, as approved by the New Hampshire Department of Environmental Services (NHDES). This Permit is issued for a period of 5 years to monitor the groundwater at the subject site and is a renewal of your Permit that expired on April 11, 2023.

Please provide all required groundwater quality monitoring submittals to NHDES under the appropriate Cover Sheet for Reports and completed Cover Sheet for Groundwater Monitoring Reports. The cover sheets must clearly show the NHDES identification number for this site (i.e., DES Site #198704033, Project #1737). NHDES prefers for documents to be submitted in an electronic format through the OneStop database.

As defined under Condition #11 of the Permit, Summary Reports are required to be submitted annually in the month of September following the associated July monitoring rounds. Groundwater quality data transmittals for other monitoring rounds must, at a minimum, include a tabulated summary of analytical results, a current site plan, and laboratory data sheets.

Please note that the requirements of the site water quality monitoring program, as defined under Condition #11 of the Permit, have changed based on our review of the monitoring results collected to date and the information and recommendations provided in the Permit Renewal Application. NHDES notes the following changes have been incorporated into the monitoring schedule:

- Decommissioned monitoring wells MW-603, MW-801, B-102S/D, B-903U/L, B-904U/L, and B-914U/L have been removed from the Permit and replaced with wells B-929U, B-929L, B-930U, B-930L, B-931U, and B-931L.

- Monitoring well couplet B-928U/D has been added to the Permit monitoring schedule.
- Sulfate has been added to the Permit monitoring schedule at select site monitoring wells.
- Per- and polyfluoroalkyl substances (PFAS) monitoring has been added to the Permit at monitoring wells MW-604, B-915D, B-916U/M/D, B-909, B-917U/D, B-917L, B-924L, and B-925L.
- Sampling and low-level analysis of 1,2-dibromoethane (ethylene dibromide [EDB]) and 1,2-dibromo-3-chloropropane (DBCP) has been included in the Permit monitoring schedule at site monitoring locations twice during the permit.

NHDES recommends that PFAS samples be analyzed using an isotope dilution method using LC/MS/MS for a broad suite of target analytes to evaluate the potential source(s), transport, and fate of PFAS impacts. NHDES encourages analysis of PFAS samples using the draft USEPA CWA Method 1633, noting that this method is subject to revision. Alternatively, NHDES will accept analysis following the protocols for PFAS by LC/MS/MS outlined in Table B-15 of the U.S. Department of Defense Quality Systems Manual 5.4 (or later version), or isotope dilution following methodologies based on USEPA Method 533 or USEPA Method 537.1. NHDES also recommends that analytical data summary tables and laboratory reports include both CAS Number and analyte names, with PFAS ordered by carbon chain length and split by families. NHDES recommends an expanded analytical list, which includes potential precursors, be utilized for PFAS monitoring events to provide the most informative picture possible of potential upgradient influences to site groundwater.

Please note that along with the submittal of documents through NHDES' OneStop website, NHDES is requesting that all PFAS analytical results be uploaded to NHDES' Environmental Monitoring Database (EMD). Please continue to upload future rounds of PFAS sampling to the EMD as they become available using NHDES' Environmental Monitoring Database (EMD) Process for PFAS Data Collected at Waste Sites guidance. Technical questions regarding EMD data uploads should be directed to Elijah Herman at (603) 271-2979 or Elijah.M.Herman@des.nh.gov.

Assessment Monitoring:

NHDES notes Volatile Organic Compounds (VOCs) have not been detected above laboratory reporting limits at MW-701 since April 2019 and at B-918M since August 2019. However, several PFAS continue to be detected, although at generally decreasing concentrations, at both locations. We note detected concentrations of other monitored landfill leachate indicator parameters at MW-701 and B-918M indicate generally stable concentrations and trends over time. Based on the monitoring well locations and analytical results, the groundwater impacts are consistent with residual impacts from previously identified and corrected leachate management issues and do not appear indicative of a new release from the landfill. However, assessment monitoring shall continue at MW-701 and B-918M on a quarterly basis as a result of the PFAS detections to confirm this premise. Sampling and analysis of PFAS, NHDES Waste Management Division Full List of Analytes for volatile organics, 1,4-dioxane (using a 0.25 micrograms per liter [ug/L] reporting limit), specific conductance @25°C, pH, temperature, and turbidity, nitrate, sulfate, Total Kjeldahl Nitrogen (TKN), chloride, iron, and manganese is required. NHDES notes if increasing trends of leachate indicator parameters are noted, or if PFAS concentrations do not continue to show downward trends, additional investigation and/or expanded monitoring may be required.

Supplemental Site Investigation:

Please note the ongoing Supplemental Site Investigation (SSI) initiated to delineate the downgradient extent of groundwater impacts, initially noted in the area of the B-304 couplet wells, was addressed under separate cover in a June 30, 2023 letter by NHDES. The specific requirements discussed in the June 30, 2023 letter have not been incorporated into the Permit monitoring requirements under Condition #11. However, regular monitoring of the B-928 monitoring well couplet, installed in September 2021 as part of the SSI, has been included in the Permit monitoring schedule as noted above.

Should you have any questions, please contact me at NHDES' Waste Management Division.

Sincerely,

Waste Management Division

Digitally signed by Waste Management Division
Date: 2023.09.18 15:37:49 -04'00'

James W. O'Rourke, P.G.
Waste Management Division
Tel: (603) 271-3116
Email: James.W.ORourke@des.nh.gov

ec: Timothy White, P.G., Sanborn, Head & Associates, Inc.
Bethlehem Board of Selectmen
Bethlehem Health Officer
Leah McKenna, SWMB Administrator, NHDES
Jaime Colby, P.E., SWMB/NHDES
Amy Renzi, P.G., HWRB State Sites Supervisor, NHDES

The

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

hereby issues

GROUNDWATER RELEASE DETECTION PERMIT NO. 198704033-B-008

to the permittee

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

for release detection monitoring at the

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC. (NCES) LANDFILL
(581 Trudeau Road)

in BETHLEHEM, NH

via the groundwater monitoring system comprised of

39 monitoring wells monitoring wells, 4 springs, and 4 surface water sampling stations

as depicted on the Site Plan entitled

Groundwater Elevation Contour Plan (Figure Number 1),
dated April 12, 2023, prepared by Sanborn, Head & Associates; and

Groundwater Management Zone Plan for Lands of North Country Environmental Services, Inc. and Forest Acquisitions, Inc., dated October 2017, prepared by Horizons Engineering, Inc.

TO: NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.
25 GREENS HILL LANE
RUTLAND, VT 05701

Date of Issuance: September 18, 2023
Date of Expiration: September 17, 2028

Pursuant to authority in N.H. RSA 485-C:6-a and 485-C:13, the New Hampshire Department of Environmental Services (NHDES), hereby grants this permit to monitor groundwater at the above described location for five years, subject to the following conditions:

(continued)

STANDARD PERMIT CONDITIONS

1. The permittee shall not cause groundwater degradation that results in a violation of surface water quality standards (N.H. Admin. Rules Env-Wq 1700) in any surface water body.
2. The permittee shall allow any authorized staff of NHDES, or its agent, to enter the property covered by this Permit for the purpose of collecting information, examining records, collecting samples, or undertaking other action associated with this Permit.
3. The permittee shall apply for renewal of this Permit prior to its expiration date but no more than 90 days prior to expiration.
4. This Permit is transferable only upon written request to, and approval of, NHDES. Compliance with the existing Permit shall be established prior to Permit transfer. Transfer requests shall include the name and address of the person to whom the Permit transfer is requested, the signatures of the current and future permittees, and a summary of all monitoring results to date.
5. NHDES reserves the right, under N.H. Admin. Rules Env-Or 600 and Env-Or 700, to require additional hydrogeologic studies and/or remedial measures if NHDES receives information indicating the need for such work.
6. Issuance of this permit is based on the Groundwater Management and Release Detection Permit Application dated April 18, 2023, and the historical documents found in NHDES file DES Site #198704033. NHDES may require additional hydrogeologic studies and/or remedial measures if invalid or inaccurate data are submitted.

STANDARD MANAGEMENT PERMIT CONDITIONS

7. The permittee shall not violate Ambient Groundwater Quality Standards adopted by NHDES (N.H. Admin. Rules Env-Or 600) in groundwater outside the boundaries of the Groundwater Management Zone, as shown on the referenced site plan.
8. Within 30 days of discovery of a violation of an Ambient Groundwater Quality Standard at or beyond the Groundwater Management Zone boundary, the permittee shall notify NHDES in writing. Within 60 days of discovery, the permittee shall submit recommendations to correct the violation. NHDES shall approve the recommendations if NHDES determines that they will correct the violation.

STANDARD RELEASE DETECTION CONDITIONS

9. The permittee shall not cause a regulated contaminant as defined in RSA 485-C to be introduced to the ground or groundwater.
10. The permittee shall notify NHDES in writing within 10 days of discovery of any constituents in the detection monitoring with a concentration above the background value in any downgradient monitor well. Following the procedures in Env-Or 703.18, Assessment Monitoring, the permittee shall initiate assessment monitoring and, if necessary, submit to NHDES a corrective action plan.

MONITORING REQUIREMENTS

11. The permittee shall maintain a water quality monitoring program and submit monitoring results to NHDES' Waste Management Division no later than 45 days after sampling. Samples shall be taken from on-site monitoring wells and surface water sampling points as shown and labeled on the referenced site plan and other sampling points listed on the following table in accordance with the schedule outlined herein:

Monitoring Locations	Sampling Frequency	Parameters
***Management Wells*:** B-103S, B-103D, B-928U, and B-928D	April, July, and November each year	Specific conductance 25°C, pH, COD, bromide, chloride, nitrate, TKN, iron, manganese, NHDES Waste Management Division Full List of Analytes for Volatile Organics (Full List VOCs), and 1,4-Dioxane (using a 0.25 ug/l reporting limit)
MW-604	July each year	Same as above and sulfate
MW-604, B-928U, and B-928D	April, July, and November each year	Per- and polyfluoroalkyl substances (PFAS)
B-103S and B-103D	July each year and, April and November 2024, 2026, and 2028	PFAS
B-103S, B-103D, B-928U and B-928D	July each year	Arsenic, barium, cadmium, chromium, lead, and sulfate
MW-604	July 2026	Arsenic, barium, cadmium, chromium, and lead
B-103S and B-103D, B-928U, B-928D, and MW-604	July 2025	Semi-volatile organic compounds (SVOCs) using the USEPA Method 8270C list of analytes, and sulfate
Same as above	July 2024 and 2028	Low-level 1,2-dibromoethane (ethylene dibromide [EDB]) and 1,2-dibromo-3-chloropropane (DBCP)
Release Detection Wells: MW-701, MW-802, MW-803, B-304UR, B-304DR, B-909, B-915U&M, B-916U&M, B-917U, B-918U&M, B-919U&M, MW-926U&L and B-927U&M, B-929U, B-930U, and B-931U	April, July, and November each year	Specific conductance @25°C, pH, COD, bromide, chloride, nitrate, TKN, iron, and manganese
Same as above	April and November each year	Full List VOCs and 1,4-dioxane (using a 0.25 ug/l reporting limit)
Same as above	July 2024 and 2028	EDB and DBCP
Same as above	July each year	PFAS

Monitoring Locations	Sampling Frequency	Parameters
B-304UR and B-304DR	April and November each year	PFAS
Same as above	July each year	1,4-dioxane (using a 0.25 ug/l reporting limit)
All Release Detection Wells above and B-924U	July 2025 and 2027	Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, thallium, and sulfate
All Release Detection Wells above, B-923U, B-924U, and B-925U	July 2025	SVOCs using the USEPA Method 8270C list of analytes
B-923U and B-925U	April, July, and November 2024, 2026, and 2028	Specific conductance @25°C, pH, COD, bromide, chloride, nitrate, TKN, iron, and manganese
B-924U	April, July, and November 2023, 2025, and 2027	Specific conductance @25°C, pH, COD, bromide, chloride, nitrate, TKN, iron, and manganese
B-923U and B-925U	April and November 2024, 2026, and 2028	Full List VOCs including 1,4-dioxane (using a 0.25 ug/l reporting limit)
B-924U	April and November 2023, 2025, and 2027	Full List VOCs and 1,4-dioxane (using a 0.25 ug/l reporting limit)
B-923U and B-925U	July 2024, 2026, and 2028	Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, thallium, and sulfate
B-923U	July 2024	PFAS
B-924U	July 2025 and 2027	PFAS
B-925U	July 2025	PFAS
B-924L and B-925L	July 2026	Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, thallium, and sulfate, and PFAS
MW-802, MW-803, B-919U, B-919M, and B-931U	April and November each year	Arsenic
B-915D, B-916D, B-917D, B-918D, B-919D, B-924L, B-925L, B-927L, B-929L, B-930L, and B-931L	July 2024, 2026, and 2028	Specific conductance @25°C, pH, COD, bromide, chloride, nitrate, TKN, iron, manganese, Full List VOCs, and 1,4-dioxane (using a 0.25 ug/l reporting limit)
B-915D, B-916D, B-917D, B-918D, B-919D, B-927L, B-929L, B-930L, and B-931L	July 2024 and 2028	EDB and DBCP
Same as above	July 2025 and 2027	Specific conductance @25°C, pH, and PFAS

Monitoring Locations	Sampling Frequency	Parameters
All monitoring wells	April, July, and November each year	Static water level elevation
Surface Water Samples: S-1 (Main Seep) and SF-1 (surface flow from Main Seep)	April, July, and November each year	Specific conductance @25^{o}C, pH, COD, chloride, nitrate, TKN, iron, manganese, Full List VOCs, and 1,4-dioxane (using a 0.25 ug/l reporting limit)
Springs S-101, S-108, and S-109	July each year	Same as above
Ammonoosuc River sites AR-1, AR-2, and AR-3	July each year	Same as above
All surface water sampling locations above	July 2025	Antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, and thallium
Same as above	July 2024 and 2028	EDB and DBCP

Sampling shall be performed in accordance with the documents listed in Env-Or 610.02(e). Samples shall be analyzed by a laboratory certified by the U.S. Environmental Protection Agency, or NHDES pursuant to Env-C 300. All overburden groundwater samples collected for metals analyses shall be analyzed for dissolved metals; and thus must be field filtered (with a 0.45-micron filter) and acidified after filtration in the field. Surface water samples, and groundwater samples collected from bedrock or water supply wells, shall be analyzed for total metals, and shall not be filtered.

Summaries of water quality shall be submitted annually to NHDES' Waste Management Division, in the month of September, using a format acceptable to NHDES. The Summary Report shall include the information listed in Env-Or 607.04 (a), as applicable.

The Annual Report shall be prepared and stamped by a professional engineer or professional geologist licensed in the State of New Hampshire.

12. All monitoring wells at the site shall be properly maintained and secured from unauthorized access or surface water infiltration.

ADDITIONAL CONDITION FOR LANDFILLS

13. The permittee shall construct and maintain a capping system at the facility that meets the standards set forth in Env-Sw 805.10.

SPECIAL CONDITIONS FOR THIS PERMIT

14. Recorded property within the Groundwater Management Zone is indicated on the "Groundwater Management Zone Plan for Lands of North Country Environmental Services, Inc. and Forest Acquisitions, Inc." dated October 2017 and prepared by Horizons Engineering, Inc., and includes the lots as listed and described in the following table:

Tax Map / Lot No.	Property Address	Owner Name and Address	Deed Reference (Book / Page)
419 / 20	395 Laurel Lane Bethlehem, NH 03574	North Country Environmental Services (NCES) PO Box 9 Bethlehem, NH 03574	2239 / 862 1971 / 460
419 / 21	581 Trudeau Road Bethlehem, NH 03574	NCES PO Box 9 Bethlehem, NH 03574	3920 / 308 2239 / 862 1971 / 460
419 / 22	581 Trudeau Road Bethlehem, NH 03574	NCES PO Box 9 Bethlehem, NH 03574	2239 / 862 1971 / 460
419 / 25	Muchmore Road Bethlehem, NH 03574	NCES PO Box 9 Bethlehem, NH 03574	4180 / 125
419 / 26.1	285 Muchmore Road Bethlehem, NH 03574	Forest Acquisitions, Inc. 3903 Bellaire Boulevard Houston, TX 77025	2177 / 345
419 / 26.2	317 Muchmore Road Bethlehem, NH 03574	Forest Acquisitions, Inc. 3903 Bellaire Boulevard Houston, TX 77025	2177 / 345

15. The permittee shall update the ownership information required by Env-Or 607.03(a)(20) for all properties within the Groundwater Management Zone prior to renewal of the Permit, or upon a recommendation for site closure.

16. Each Annual or Periodic Summary Report shall include updated potential receptor information meeting the requirements of Env-Or 606.07(d). Potential receptor information shall be presented on a tax map with an accompanying table showing updated property ownership and use information.

Jeffrey M. Marts, P.G., Administrator
Hazardous Waste Remediation Bureau
Waste Management Division

Any person aggrieved by any terms or conditions of this permit may appeal to the N.H. Waste Management Council ("Council") by filing an appeal that meets the requirements specified in RSA 21-O:14 and the rules adopted by the Council, Env-WMC 200. The appeal must be filed **directly with the Council within 30 days** of the date of this decision and must set forth fully **every ground** upon which it is claimed that the decision complained of is unlawful or unreasonable. Only those grounds set forth in the notice of appeal can be considered by the Council.

Information about the Council, including a link to the Council's rules, is available at https://nhec.nh.gov/. Copies of the rules also are available from NHDES' Public Information Center at (603) 271-2975.