THE STATE OF NEW HAMPSHIRE

MERRIMACK, SS SUPERIOR COURT

Docket No. 217-2020-CV-212

Casella Waste Systems, Inc.

v.

Jon Swan & Save Forest Lake, et al.

APPENDIX TO AFFIDAVIT OF JON SWAN IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT

TABLE OF CONTENTS

Respectfully Submitted,

SAVE FOREST LAKE & JON SWAN

By their Attorneys,

ORR & RENO, P.A.

Date: April 14, 2022 By: */s/ Jeremy D. Eggleton*

Jeremy D. Eggleton, Esq. (N.H. Bar No. 18170)
45 South Main Street, Suite 400
P.O. Box 3550
Concord, NH 03302-3550
Phone: (603) 224-2381
Fax: (603) 224-2318
jeggleton@orr-reno.com

CERTIFICATION OF SERVICE

I, Jeremy D. Eggleton, do hereby certify that a copy of this Appendix to Statement of Material Facts was forwarded, this day, to counsel of record, via the Court's electronic service system.

/s/ Jeremy D. Eggleton

3447877_1

From:	Morgan G. Tanafon
To:	Eggleton, Jeremy D.
Cc:	Bryan Gould; Cooley Arroyo
Subject:	Alvarez - Meet and Confer Follow-up
Date:	Thursday, July 8, 2021 5:02:02 PM

Dear Jeremy,

This email is intended to memorialize our discovery meet and confer on July 7 to ensure we both arrived at the same understanding and that we agree on how we are moving forward on resolving the discovery disputes still at issue. I know we still have some issues to address after yesterday's meeting was cut short, and I hope we can set up another call to conclude our conversation in the coming days. I'm available July 12 from 9am to 3pm, or July 13 from 10am to 2pm, so please let me know if either of these works for you or if you have another workable date and time you'd prefer.

During our meet and confer, we discussed outstanding discovery issues and arrived at the following conclusions:

1. We discussed which of Swan's allegedly defamatory statements are still actionable after the Order on the Motion to Dismiss (8/10/20). We determined that Swan's statements concerning the following topics are still actionable:
    a. Swan's assertion that Casella scammed Don Mooney in Dalton and Cliff Crosby in Bethlehem.
    b. Swan's assertion that the high contamination rate of Casella's "zero-sort" recycling system means it landfills most of its recyclables, which contributed to the collapse of the recycling market.
    c. Swan's assertion that Casella filled NH landfills with out of state trash.
    d. Swan's assertion that Casella illegally spilled 8,000 gallons of leachate into the Black River in Vermont.
    e. Swan's assertion that Casella's Coventry landfill was operating outside permitted hours in relation to the accident that resulted in the leachate spill near the Black River.
    f. Swan's assertion that Casella polluted the Ammonoosuc River.
    g. Swan's assertion that Casella tried to improperly influence the vote of the Bethlehem Planning Board by "packing" the Board.
    h. Swan's assertion that Casella conspired with Horizons Engineering to avoid compliance with regulatory requirements via a deceptive lot line adjustment.
    i. Swan's assertion that Casella was complicit in sending millions of gallons of leachate to third parties knowing they would improperly treat it before discharging it into the Merrimack River.
    j. Swan's assertion that Casella has somehow participated in Ms. Cardillo's effort to obtain a protective order against Swan, weaponized the legal system against him and thus committed a fraud upon the court.

    Since the Motion to Dismiss limited potentially actionable statements to these topics (and any possible future false statements of fact that Swan makes), we concluded that the scope of relevance for discovery is limited to this list of topics.

2. Casella agreed to consider supplementing its discovery productions for three requests:
    a. Response to Interrogatory #7: Supplementing the response to identify civil litigation for a period from January 1, 2011 to the present, for all cases involving the Coventry or NCES landfills, or the Merrimack or Ammonoosuc Rivers.

b. Response to Interrogatory #15: Supplementing the response include any communications, studies, or reports concerning the leachate spill accident near the Black River on December 27, 2019.
c. Request for Production #3: Supplementing the production to include documents regarding inspections, inquiries, and actions by regulatory agencies since January 1, 2011 that involve the Coventry or NCES landfills, or the Merrimack or Ammonoosuc Rivers.

Casella will finalize its determination about these proposed supplementations after we've had our follow-up meeting to conclude our conversation from yesterday.

3. We discussed the defendant's request for communications between Casella and the Town of Dalton. Casella's position is that Swan made specific allegations that Casella "scammed" two persons (Don Mooney and Cliff Crosby, not named but clearly indicated by circumstance), and thus the current production satisfies the relevant portions of the request. Your position is the statement implicated an effort by Casella to scam all the elderly residents of Dalton, and thus all communications between Casella and the town are relevant. We did not reach a resolution on this issue.
4. We began to discuss Casella's issues with Swan's discovery production but were cut short by circumstance. You indicated that some parts of Swan's production would be supplemented, but we have not yet determined which specific aspects require supplementation and which (if any) must be addressed with a motion to compel. Further discussion is needed on this topic.
5. We tentatively agreed on mutual supplemental productions for those items we'd agreed to supplement on or before July 20. As I do not yet know what if anything you have agreed to produce by that date, that production is currently on hold on our end until we can come to a landing on what supplemented responses we can expect from Swan. Depending on how long it takes to have our follow up call, we might want to reschedule that date to give us both time to arrange the supplemental production.

Please let me know if this reflects your understanding of our discussion and agreements. I look forward to scheduling a follow-up meet and confer as soon as possible to conclude our conversation about Swan's production and iron out exactly which requests he will be supplementing. Please let me know what dates and times would work best for you.

Regards,

Morgan

Morgan G. Tanafon
Associate
CLEVELAND, WATERS AND BASS, P.A.
Two Capital Plaza, 5th Floor
P.O. Box 1137
Concord, NH 03302-1137
Tel: (603) 224-7761 / (800) 370-7761, ext. 1034
Direct Dial: (603) 229-1034
Fax: (603) 224-6457
Email: tanafonm@cwbpa.com

With offices also in New London and Wolfeboro, NH, and Haverhill, MA.

Save Forest Lake
January 16

(This is meant to be satirical but obviously very much based on local reality)

From the Forest Lake Protective Bureau:
Scam Alert!

Please talk to your friends and loved ones, especially the elderly and more vulnerable, so they don't fall victim!

An investigator learned of two different scams just this week!

The first was perpetrated on an elderly citizen in the Town of Bethlehem. It seems that a waste management company had convinced him over the past 8 months that going door to door in that town, along with posting signs throughout, at a significant cost to both his finances and reputation, would somehow convince the residents of that town that a continued relationship would that company would somehow be of benefit to the town. Please be sure to keep an eye on your loved ones so that they don't fall victim to this as well!

The second case involved an elderly citizen in the Town of Dalton. There, too, a waste management company had persuaded a town elder, via email, to put his reputation on the line by presenting an apparently fictitious offer of riches to the town government, with "no strings attached" (yes, he sadly fell for that one), without the realization that this could be deemed as an attempt to influence public opinion regarding a very unpopular landfill development. "Confusion" on the part of the elderly victim was cited by the waste management company representative when approached by investigators.

Please be sure to monitor the activities, including email and social media accounts, of your elderly loved ones to protect them from such scams in the future, particularly those centered around requests by waste management companies seeking advocates to lobby the public on their behalf. This has become a favorite of waste management companies, most of whom are worth hundreds of millions of dollars and have employees capable of doing their own dirty work.

Thank you!

3 5 Comments 2 Shares

Like Comment Share

Most Relevant

Write a comment...

Brian Ke[illegible] and is the proper investigation being conducted. There's a digital footprint that can easily be traced.

From: Rebecca Metcalf
To: Morgan Tanafon
Cc: Melissa Stevens
Subject: FW: philanthropy inquiry
Date: Monday, May 03, 2021 10:41:17 AM

My initial email to Don on John's offer to a Dalton organization -

Rebecca Metcalf
Outreach Manager
Casella Waste Systems, Inc.

North Country Environmental Services
581 Trudeau Road, Bethlehem, NH 03574
P. 603-331-5847 | f. 603.869-2152

From: The Dalton Gang <tdg2@earthlink.net>
Sent: Thursday, January 2, 2020 1:51 PM
To: Rebecca Metcalf <rebecca.metcalf@casella.com>
Subject: Re: philanthropy inquiry

We had a great Holiday. Hope that you were able to enjoy yours as well.
What a wonderful offer.
I will contact the folks involved with the Fire, Emergency and the Road Departments and have them let us know what they feel would be most needed.
When I talk with the folks in charge of these Departments I will give them your card and explain that there is no
strings attached and this would be a gift. If they are interested, they should contact you directly.
Do you feel that this would be the best way to handle this?
Good to hear from you again,
Don & Nancy

> -----Original Message-----
> From: Rebecca Metcalf
> Sent: Jan 2, 2020 11:44 AM
> To: The Dalton Gang
> Subject: philanthropy inquiry
>
> Hi Don and Nancy,
>
> I hope you had a wonderful holiday.
> John Casella has asked for my assistance is something he would like to do. He is interested in providing a gift estimated between $50- 100K for an immediate need for the people of Dalton. This is no strings attached and it would come from his own philanthropy fund.
>
> Could you please do some thinking and let me know if there is something that the fire department, emergency services perhaps or the roads department might need?

Or, if you know whom I might connect with? If possible he would be looking to make the donation directly to the organization in need for the item.

Thank you

Rebecca Metcalf
Outreach Manager
Casella Waste Systems, Inc.

North Country Environmental Services
581 Trudeau Road, Bethlehem, NH 03574
P. 603-331-5847 | f. 603.869-2152

CONFIDENTIALITY NOTICE The information contained in this communication is confidential, may constitute inside information, may be attorney-client privileged and is intended only for the use of the named recipient. If the reader of this e-mail message is not the intended recipient, or the employee or agent responsible for delivery of the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is prohibited. If you have received this e-mail in error, please notify the sender immediately by telephone at +1 603-869-7287.

Jon Swan ▸ **Bethlehem, NH, USA. **Local Chat****
February 12

Just got this news from NH DES! This will be interesting to watch as it unfolds, for sure. Dalton has certainly proven that it does not want Casella as a business partner.

Casella may not have a home in NH sooner than we thought. NH has capacity for NH trash, and the North Country towns better start reaching out to AVRRDD/Mt Carberry soon. Casella needs NH so it can continue to import trash from out of state, we do not need Casella and its poor management and bully tactics. Goodbye Casella!

Save Forest Lake
February 12

Like Page

Just got this email from NH DES at 430pm:

North Country Environmental Services, Inc. (NCES), has withdrawn its application to expand the NCES landfill located in Bethlehem, NH into an area referred to as Stage VI. As such, NHDES will render no decision on the application.

NCES' withdrawal letter and NHDES' letter acknowledging the withdrawal will be available within one business day on the NHDES Solid Waste Management Bureau webpage under Hot Topics at the following link:

https://www.des.nh.gov/organizat.../divisions/.../swmb/index.htm.

If you have questions regarding this notification, you may contact Jim Martin, NHDES' Public Information Officer, at (603) 271-3710 or james.martin@des.nh.gov.

DES.NH.GOV
Welcome - Solid Waste Management Bureau - Waste Management Division - NH Department of Environmental Services
Proper management of solid waste and the related facilities is one of...

19 15 Comments 2 Shares

Like Share

Teresa Tupaj Wood Thank you, Jon Swan, for all that you've done to raise awareness about this issue.

Like 32w 1

north country ENVIRONMENTAL SERVICES
A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

March 31, 2021

NHDES, Waste Management Division
Solid Waste Management Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

RE: North Country Environmental Services, Inc.
Landfill Facility – Bethlehem, NH
NHDES Permit # DES-SW-SP-03-002
2020 Annual Facility Report

Dear NHDES Waste Management Division:

Consistent with Env-Sw 1105.07 of the New Hampshire Department of Environmental Services Solid Waste Rules, North Country Environmental Services, Inc. writes to provide the 2020 Annual Facility Report (attached) for our facility located in Bethlehem, New Hampshire.

Should you have any questions please do not hesitate to contact me at 802.651.5454.

Sincerely,

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

John Gay, E.I.
Permits, Compliance & Engineering

Enclosures

c. Kevin Roy, North Country Environmental Services, Inc. {via email}
Annette Marquis, North Country Environmental Services, Inc. {via email}

NHDES-S-05-056

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ANNUAL FACILITY REPORT
Active Solid Waste Facilities
Reporting Year *2020*

Waste Management Division, SWMB

RSA 149-M / Env-Sw 1105.07

Complete and return this form by ***MARCH 31, 2021***.

1. Facility Identification [Env-Sw 1105.13(a)]

Facility Name North Country Environmental Services, Inc.	
Physical Street Address 581 Trudeau Road	
Town/City Bethlehem	Permit Number DES-SW-SP-03-002

2. Permittee Information [Env-Sw 1105.13(b)]

Name North Country Environmental Services, Inc.		
Mailing Address PO Box 9		
Town/City Bethlehem	State NH	ZIP Code 03574
Email Address kevin.roy@casella.com	Daytime Phone Number (603) 869-3366	

3. Contact Person Check this box if this information has changed from last year. ☐

Name John Gay	Job Title Engineer
Affiliation Employee	
Email Address john.gay@casella.com	Daytime Phone Number (802) 651-5454

4. Facility Status [Env-Sw 1105.13(d)]

☒ Operated the entire calendar year.
☐ Did not operate in the calendar year.
☐ Operated part of the calendar year only. Started operating on _____/_____/2020 (Month / Day) Stopped operating on _____/_____/2020 (Month / Day)

5. Facility Status – *Operating Landfills Only* [Env-Sw 1105.13(d)]

Estimated remaining life (in years). (0.5 Years)
Estimated remaining permitted capacity (in cubic yards) as of 12/31/2020, based on a site survey. 141,628
Attach a *brief* summary of facility inspection and maintenance activities in accordance with Env-Sw 806.08(j)(2)a, and the analysis of remaining capacity per Env-Sw 806.08(j)(2)b.

NHDES-S-05-056

6. Facility Operator Information [Env-Sw 1105.13(c)]

Name	Certificate Number	Expiration Date	Still Working at Facility as of December 31?
1. See attached		/ /	☐ Yes ☐ No
2.		/ /	☐ Yes ☐ No
3.		/ /	☐ Yes ☐ No
4.		/ /	☐ Yes ☐ No
5.		/ /	☐ Yes ☐ No

☒ Additional Facility Operator Information is attached to this Annual Facility Report.

7. Waste and Recyclables Received & Shipped [Env-Sw 1105.13(e) / Env-Sw 1105.13(f)]

Type of Waste

Note: Universal Wastes and Used Oil are included in Section 11, so do NOT enter them here.

☒	Ash	☐	Electronic Waste	☐	Recyclable Materials
☐	Asbestos	☐	Food Waste Composted Onsite	☐	Scrap Metal
☒	Bulky Waste	☐	Food Waste Transferred to Composter/Processor	☐	White Goods
☒	C&D Debris	☐	Infectious Waste	☒	Other: Approved Special Waste
☒	Contaminated Soil	☒	Municipal Solid Waste	☐	Other:

Quantity of Waste

Quantity of Waste Received		Quantity of Waste Shipped	
C&D Debris Received:		C&D Debris Shipped:	
From NH Sources	96,992.57 tons	To NH Destinations	0 tons
From Out-of-State Sources	5,961.67 tons	To Out-of-State Destinations	0 tons
Total Received	102,954.24 tons	Total Shipped	0 tons
Recyclables Received:		Recyclables Shipped:	
From NH Sources	49.14 tons	To NH Destinations	tons
From Out-of-State Sources	tons	To Out-of-State Destinations	49.14 tons
Total Received	49.14 tons	Total Shipped	49.14 tons
Mixed Solid Waste/General Refuse Received:		Mixed Solid Waste/General Refuse Shipped:	
From NH Sources	88,075.54 tons	To NH Destinations	0 tons
From Out-of-State Sources	53,912.76 tons	To Out-of-State Destinations	0 tons
Total Received	141,988.30 tons	Total Shipped	0 tons

NHDES-S-05-056

8. Estimated Quantity of Waste Stored at the Facility as of December 31, 2020 [Env-Sw 1105.13(i)]

Type of Waste	Quantity Onsite as of Dec. 31		Type of Waste	Quantity Onsite as of Dec. 31
Ash	tons		Infectious Waste	tons
Asbestos	tons		Municipal Solid Waste	tons
Bulky Waste	tons		Recyclable Materials	tons
C&D Debris	tons		Scrap Metal	tons
Contaminated Soil	tons		White Goods	tons
Electronic Waste	tons		Other:	
Food Waste	tons		Other:	

9. Bypass and Residual Waste [Env-Sw 1105.13(g)]

Note: Please refer to the instructions for definitions of bypass waste and residual waste.

Waste	Total Quantity Generated	Quantity Shipped to NH Destination(s)	Quantity Shipped to Out-of-State Destination(s)	Quantity Stored Onsite as of December 31
Bypass Waste	tons	tons	tons	tons
Residual Waste	tons	tons	tons	tons
Leachate	9,091,897 gallons	9,091,897 gallons	gallons	161,056 gallons

10. Facilities Producing Certified Waste-Derived Products [Env-Sw 1105.13(h)]

Type of Waste-Derived Product Produced	Quantity Produced	Quantity Distributed for Use	Estimated Quantity Stored Onsite as of December 31
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons

☒ I certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500.

OR

☐ I CAN NOT certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500, and have attached a detailed explanation of the situation and actions taken or being taken to remedy the problem.

11. Other Activities Taking Place at the Facility

☐	Burn Pile	☐	Refrigerant Removal	☐	Other:
☐	Household Hazardous Waste Collection	☐	Swap Shop	☐	Other:
☐	Leaf & Yard Waste Composting	☐	Collection of Used Oil for Recycle	☐	Other:
☐	Used Oil Burner: EPA ID No. NHD				
Universal Waste Collection					
☐	Antifreeze	☐	Batteries (Rechargeable)	☐	Fluorescent Lamps
☐	Batteries (Automotive)	☐	Cathode Ray Tubes (CRTs)	☐	Mercury-Containing Devices

NHDES-S-05-056

12. Summary and Assessment of Environmental Monitoring [Env-Sw 1105.13(j)]

☐ None required and none undertaken.

☐ None required, but environmental monitoring was undertaken voluntarily. A summary and assessment of the environmental monitoring is attached.

☒ Environmental monitoring is required by this facility's permit and/or the Solid Waste Rules. A summary and assessment of environmental monitoring is attached.

13. Public Benefit Discussion [Env-Sw 1105.13(k)]

☐ Permit does not include a public benefit condition. (No discussion is required)

☒ Permit includes a public benefit condition. (A discussion is attached to this report)

14. Compliance Certification [Env-Sw 1105.13(l) or Env-Sw 1105.13(m)]

I certify that the facility is in compliance with the requirements of the following:

Yes	No	N/A	
☒	☐		The facility's current operating plan.
☒	☐		All terms and conditions of the facility's permit.
☒	☐	☐	Env-Sw 900 for asbestos, ash, contaminated soils, infectious waste, and/or tires.
☐	☐	☐	Env-Hw 1100 for the management of Universal Wastes.
☐	☐	☐	Env-Hw 807 for the management of Used Oil.
☐	☐	☐	Env-A 1000 for the operation of a burn pile.

If you checked "No" to any of the above, attach an explanation and proposed schedule for achieving compliance.

15. Signature [Env-Sw 1105.13(o)]

By signing below, I affirm that the material and information submitted in this report is correct and complete to the best of my knowledge and belief, and that I am the permittee or a person duly authorized to sign for the permittee.

J. Gay — Signature of Permittee or Duly Authorized Individual

3/17/21 — Date

JOHN GAY — Printed Name of Signatory

ENGINEER — Title / Permittee Affiliation

This report contains _____ attached pages (not applicable unless you have provided additional pages).

Form Submittal Instructions:

Please submit the completed form in PDF via email to solidwasteinfo@des.nh.gov. **Please do not submit a paper copy of the completed form unless that is your only means to submit.** If you must submit the AFR in paper form, for tracking purposes please notify us by email, sent to solidwasteinfo@des.nh.gov, that you have submitted the AFR in paper form.

ANNUAL WASTE RECEIPTS BY STATE OF ORIGIN

CALENDAR YEAR 2020
PERMITTEE North Country Environmental Services, Inc.
FACILITY NAME NCES Landfill
PERMIT NO. DES-SW-SP-03-002

STATE OF ORIGIN	WASTE TYPE (TONS)										
	MSW-R	MSW-C/I	CDD	INFECTIOUS	ASBESTOS	ASH	SLUDGE	C-SOIL	OTH SPW	TOTAL RECEIPTS	ADC
New Hampshire	77,770.06	0.00	96,992.57	0.00	0.00	9.46	1,727.36	100.45	568.57	177,168.47	7,899.64
Vermont	3,236.98	0.00	1,409.87	0.00	0.00	0.00	0.00	453.84	0.00	5,100.69	0.00
Massachusetts	854.18	0.00	4,538.26	0.00	0.00	0.00	15,414.99	193.81	519.54	21,520.78	32,714.20
Maine	0.00	0.00	13.54	0.00	0.00	0.00	0.00	0.00	0.00	13.54	280.29
Rhode Island	0.00	0.00	0.00	0.00	0.00	0.00	212.71	0.00	0.00	212.71	0.00
Connecticut	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.22	0.00	32.22	0.00
										0.00	
										0.00	
										0.00	
Totals	**81,861.22**	**0.00**	**102,954.24**	**0.00**	**0.00**	**9.46**	**17,355.06**	**780.32**	**1,088.11**	**204,048.41**	**40,894.13**

Note:

(1) Tonnages indicate those tons received and disposed or otherwise used within the landfill's approved design volume.

(2) "Municipal solid waste" means solid waste generated at residences, comercial or industrial establishments and institutions, but excluding construction and demolition debris,

Legend for Waste Types:

MSW-R = Municipal solid waste from residential sources
MSW-C/I = Municipal solid waste from commercial and industrial sources
CDD = Construction and demolition debris (see Env-Sw 102.42)
INFECTIOUS = Treated infectious waste (see Env-Sw 103.28 and Env-Sw 904)
ASBESTOS = Non-friable and friable asbestos-containing waste (see Env-Sw 102.14 and Env-Sw 901)
ASH = Ash residue remaining after combustion of various materials in an incinerator or other device
SLUDGE = Sludges from various water, wastewater and air pollution control processes
C-SOIL = Soil with contamination (e.g., petroleum, other substances) that is disposed or soil otherwise unsuitable for use as ADC (see Env-Sw 903)
OTH SPW = Any other waste received that is not categorized above, including industrial process wastes
TOTAL RECEIPTS = Sum of all waste receipts, which should be equal to the summation of all waste received as shown in this table (excluding ADC)
ADC = Soils and other materials permitted for use as alternative daily cover (see Env-Sw 806.03)

North Country Environmental Services, Inc.
Landfill Facility, 581 Trudeau Road, 03574
****

DES-SW-SP-03-002

2020 Annual Facility Report ~ Public Benefit Discussion

Stage V Capacity Analysis Permit Condition 13(c)(i)

The facility is tracking to provide Stage V capacity beyond April 2021 and once Stage VI is approved the facility will have capacity through 2026.

Stage V Determination of Public Benefit Permit Condition 13(c)(ii) & 2015 New Hampshire Revised Statutes, Title X Public Health, Chapters 149-M:2, M:3 & M:11

Casella Waste Systems, Inc. (CWS) managed the diversion of over 32,000 tons of recycling from New Hampshire sources along with another 2,000 tons of items like electronic waste and wood waste. The Organics division of CWS successfully managed over 5,500 tons of wood ash, biosolids, glycerin and food scrap from New Hampshire sources in 2020.

Our Resource Solutions and Innovation group worked with five Industrial accounts in New Hampshire and assisted them with to achieve a diversion of 90% of waste to recycling. In addition, we assisted six college/universities with diversion strategies with two of them reaching a diversion of 50%.

Our Northeast Waste Division assisted the Town of Enfield with its waste management system to divert almost 30% (not including the residential drop off) of its generated waste from landfilling and Plainfield with a diversion of nearly 41%.

With respect to education across New Hampshire, we estimate that CWS provided over 1,400 hours of support and helping to bring awareness to better uses for our materials. We have a mechanism where drivers can leave a note on customers waste and recycling containers to notify them of opportunity to improve recycling quality.

The North Country Environmental Services, Inc. (NCES) Landfill Facility managed 185,068 tons of waste that was generated within New Hampshire municipalities. As landfills continue to close in the northeast, it is inevitable that waste will cross state borders and while 76% of the waste we

accepted originated in New Hampshire, 24% of the waste originated from outside New Hampshire assisting those state with disposal needs.

NCES continues to provide critical disposal services for over 150 New Hampshire municipalities, 50,000 households and 5,500 businesses equating to over 233,000 tons of solid waste accepted from New Hampshire sources.

In addition to providing necessary waste disposal capacity for NH towns, the NCES landfill facility also accepted the following recycling materials from Bethlehem residents at no charge;

- single stream (Zero Sort™) recycling,
- re-use zone
- electronic waste,
- waste bulbs
- scrap metal,
- clean wood, leaf & yard debris
- white goods, and
- used oil
- anti-freeze
- tires
- batteries

In 2020 NCES;

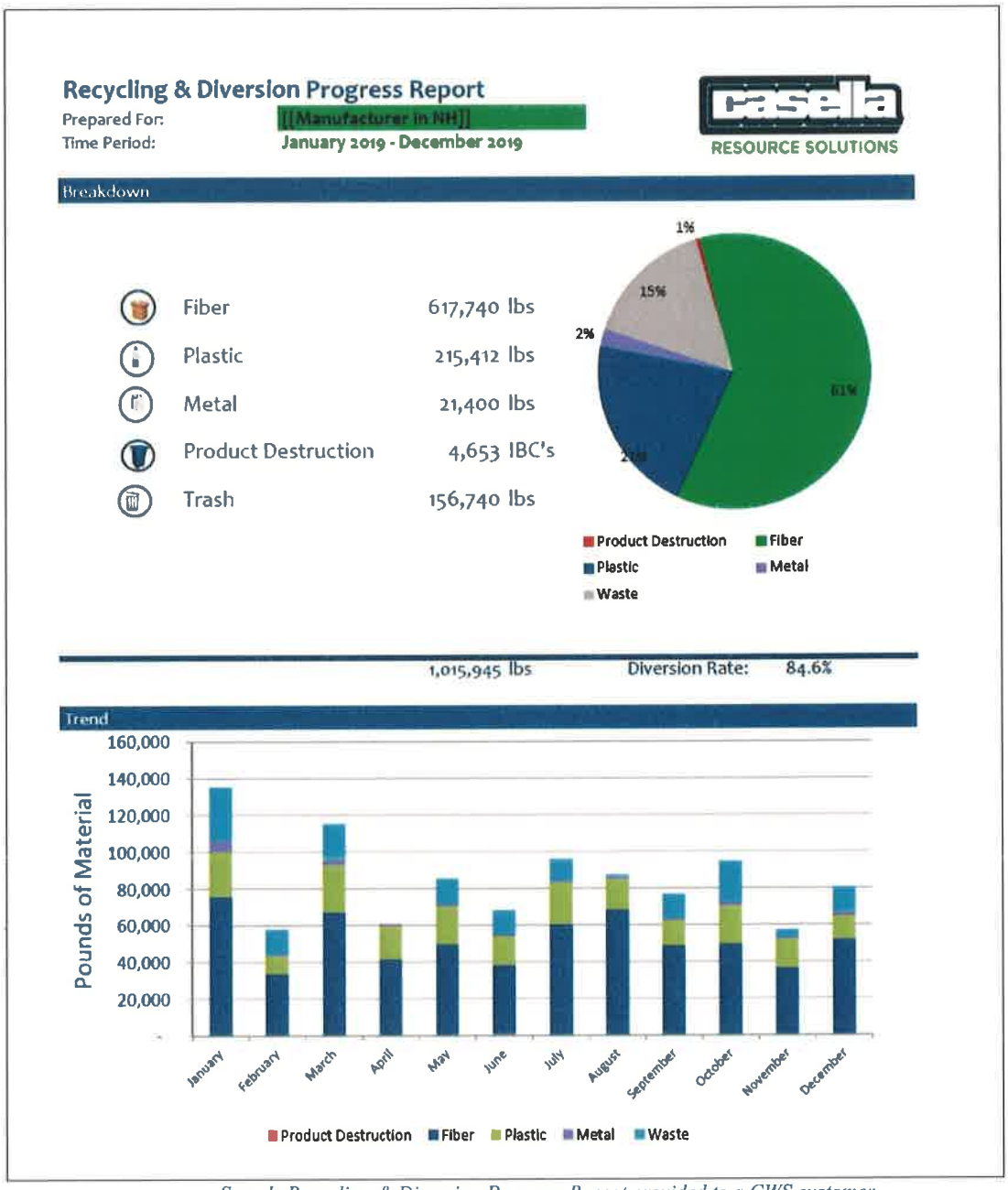
1. Provided free curbside solid waste and recycling service to Bethlehem residents,
2. Hosted local schools and provided educational tours of the facility to share landfill design, permitting, construction & operational education,
3. Managing the on-site greenhouse and using renewable energy landfill geothermal heating to keep the greenhouse warm in the winter,
4. Reduced the overall facility emission by utilizing a landfill geothermal heating system to heat the facilities maintenance shop and green house,
5. Hosted an invite only Covid safe open house so area residents could learn how a modern landfill is designed, permitted, constructed, and operated,
6. Requires solid waste haulers to access the site via Route 3 and Trudeau Road, keeping downtown Bethlehem free from solid waste haulers other than those collecting waste and recycling in Bethlehem.
7. Provided mailers helping to keep area residents informed on landfill and recycling

related information (copies attached),

8. Provided financial donations to local organizations, schools and Town of Bethlehem initiatives,
9. In cooperation with RUDARPA, finalized the financing for a renewable energy project that will collect and containerize the landfills methane gas and carbon dioxide gas for offsite renewable energy use.
10. Weekly, provide customer support assistance for waste reduction by providing guidance to New Hampshire residents on options for landfill waste diversion and the reuse of materials.

Also in 2020, NCES supported the following local businesses;

- The Littleton Playground Project
- Veterans Dental Program, Littleton Area
- Bethlehem Food Bank
- Littleton Area Senior Center - Meals on Wheels Program
- Bethlehem Community Events - Christmas in Bethlehem, NH
- Dalton Food Bank, Dalton Congo Church, Dalton, NH
- Carter's Clean Up Crew - Safety equipment and disposal - Manchester, NH
- Copper Cannon Camp Donation
- Littleton Area Chamber of Commerce Covid Small Business Support Advertising Series
- Littleton Area Blood Drive radio sponsorship
- Boys and Girls Club of the North Country Sponsorship donation, Lisbon, NH
- Adaptive Sports Partners, sponsorship donation, Franconia, NH
- Team Rubicon, Veterans Assistance Disposal donation



Sample Recycling & Diversion Progress Report provided to a CWS customer

- Hypertherm, Inc. generates industrial waste in Hanover that is difficult to recycle through conventional means. Each month, the facility processes over 50 tons of loose, baled, supersacked or ground film plastics, rigid plastics, plastic tubing and hosing, plastic and wooden reels, label backing, cardboard, metal, and other unique and hard-to-recycle items. CWS worked with Hypertherm to establish an innovative recycling program called an Aggregation and Recovery Collaborative (ARC), which, in conjunction with Zero-Sort recycling, has helped to double Hypertherm's recycling rate for these materials from 43% during a ten-year period. Other companies in the region are also

participating in the ARC. This partnership has made it easier for Hypertherm to recycle these items and substantially reduce the waste it sends to disposal facilities. This partnership received the 2016 New Hampshire Governor's Award for Innovative Partnership. In 2019, Hypertherm diverted more than 467 tons of industrial recyclables out of the waste stream, achieving a diversion rate of 61% that increases to nearly 90% when metals are taken into account.

- CWS also successfully renewed or won the bid process for the following municipal contracts to manage large volumes of recyclables:
  - Town of Newmarket: Approximately 800 annual tons
  - Town of Stratham: Approximately 850 annual tons
  - Town of Brentwood: Approximately 340 annual tons
  - Town of Danville: Approximately 425 annual tons

- CWS affiliates facilitate the recycling of C&D and natural materials. In 2019, CWS diverted the following volumes out of the waste stream and into recycling facilities:
  - 2,100 tons of metal materials
  - 400 tons of wood materials
  - 40,700 tons of C&D debris
  - 60 tons of e-waste materials (*e.g.* cell phones, laptop computers, televisions)
- Casella's brokerage division provides recyclables marketing services for many towns in New Hampshire and leverages its professional knowledge of commodity markets to help these municipalities receive the best possible prices for the recycled commodities that they collect and process from local customers. The brokerage division at Casella coordinates direct shipment of these materials to domestic mills which then use the recycled commodities as raw material. In 2019 alone, Casella brokered 13,000 tons of recycled commodities for New Hampshire municipalities and businesses and diverted those materials from the waste stream. This is an increase in 3,000 tons compared to 2017. The brokerage division works with customers in Wolfeboro, Ossipee, Thornton, Peterborough, and Conway to educate them on ways to "clean up" their plastics so they can be processed and directed to final end sites.
- Casella Waste Management of Massachusetts, Inc. manages waste for notable industrial businesses within New Hampshire. For example, Rochester companies Albany International and Safran Aerospace combined to divert 85 tons of mixed recyclables, 27 tons of metal, and 50 tons of C&D.
- CWS operates waste and recycling transfer stations in Allenstown, Raymond, Concord, Newport, Lebanon, and Belmont, which are available to New Hampshire residents and businesses for disposal of both recyclables and other difficult to manage materials such as e-waste, tires, and waste oils, in addition to MSW and C&D. These transfer stations also accept municipal recycling collected curbside by Casella haulers from Danville, Laconia, Concord, Hebron, and Belmont and third-party haulers traveling from other towns and cities. CWS provides hauling and transfer services for recyclables from other municipally operated transfer stations in towns like Pembroke, Sanbornton, and Alton. Casella then delivers these recyclables to materials recovery facilities for processing. The convenience of these services encourages additional recycling, therefore diverting more waste from the waste stream, and provides logistical support to municipalities to help them provide recycling services to local residents.

CWS and NCES proactively engage with the public to educate people about the importance of recycling and sustainable disposal measures. Both companies routinely hold events to inform the public about the efficacy and benefits of recycling and reuse. NCES holds informational events at its Bethlehem facility, including "open houses," school field trips, and tours for members of the public. In 2019, the facility hosted an "open house" for 375 attendees and nine separate site tours. NCES also operates a greenhouse on site that is utilized by students from Bethlehem Elementary School for growing produce and flowers for local gardens. The greenhouse is integrated into classroom instruction to educate students on the benefits of composting and the science of geothermal heating.

Engineer Joe Gay educates a group of students from Haverhill Cooperative Middle School on sustainability initiatives during a site visit at NCES.

CWS estimates that its employees spend more than 1,400 hours per year performing recycling outreach and education events with local administrators, officials, and members of the public. These events include conversations with town recycling coordinators, working with customers to improve signage, and speaking at local government meetings about diversion practices. The company recently held events to promote recycling awareness at local school systems in Auburn, Derry, Stratham, Newfields, East Kingston, and Allenstown. CWS also sponsors an annual calendar art contest for students in New Hampshire and other Casella service areas. Students can submit artwork related to the environment, recycling, re-use of materials, reduction of waste, or landfills and recycling trucks for consideration in the company's annual calendar. Students must create their artwork in the classroom, and teachers have incorporated this contest into their curricula with conversations about reducing waste in the waste stream and reusing and recycling materials to benefit the environment. These programs inculcate awareness of the reasons for waste diversion among children and can instill lifelong commitment to diversion.

CWS has generated a library of posters, flyers, and video materials to support recycling. One example is the "Truth About Recycling" flyer that addresses common misconceptions about recycling.[22] Figure 6, below. This flyer has been shared with large institutional accounts like SNHU, St. Paul's School, and Phillips Exeter Academy to promote recycling for those customers. A similar flyer was also distributed to every individual resident in the towns and cities serviced by CWS in Vermont and New Hampshire, ensuring broad distribution of these educational materials that promote recycling and inform the public about reduction of the waste stream.

The collapse of foreign recycling markets has temporarily made municipal recycling programs uneconomic, leading some New Hampshire towns to begin dismantling their programs. CWS has counseled against this reaction. It has informed municipal customers considering a cessation of

[22] These materials are available on demand online at https://www.casella.com/services/recycling/recycle-better

recycling that facilities are being developed in North America to replace the capacity formerly provided in Asia and through its Recycle Better™ initiative it has disseminated guidance to the public on how to avoid contamination of recyclables and which wastes are in fact recyclable. It has also taken steps to assist New Hampshire municipalities to improve their recycling practices, thereby avoiding some of the impact of the downturn in the market. For example:

- Laconia faced economic pressures because it had multiple recycling drop-off locations in the city that attracted highly contaminated material. CWS collaborated with Laconia to install centralized compaction equipment in a location easily monitored by local officials, ensuring the continued practice of recycling in the city, improved quality of the recycled materials, and reduced hauling costs for the city.
- CWS worked with the City of Concord to install specialized container lids to prevent the contamination of recyclables collected in the downtown district; this effort allowed downtown businesses to continue productively recycling and diverting materials out of the waste stream.
- Hebron faced significant cost increases for its curbside recycling program. CWS implemented the use of a split-body collection truck that allowed the company to collect MSW and recycling in a single truck, reducing collection costs in a manner that offset the majority of the town's increased recycling costs.
- The Town of Enfield approached CWS in 2013 to inquire about adding curbside recycling services without increasing its curbside trash collection costs. CWS was able to offer this service at no additional cost and will continue offering this service through a contract that expires in 2023. CWS also held a community event in Enfield that was attended by 60 people to educate them about recycling and its benefits.
- In Hanover and Plainfield, processing costs for recyclables have significantly increased. In 2016, these communities paid $61.17 per ton and $0 per ton, respectively, but as of this summer those amounts will increase to $135 per ton and $130 per ton. Despite these increases, with encouragement from CWS these towns are continuing their recycling programs, and CWS is maintaining open communication with them to explain commodity processing fee declines and the manner in which reduced contamination rates cause processing fees to change. CWS has had similar conversations with Dartmouth College and will soon have the final extension term for waste collection services with that institution. In 2016, the school paid $3.37 per ton for recyclables processing, and that figure will increase to $130 per ton. Despite this increase in cost, Casella was able to persuade Dartmouth College in contract negotiations to continue its recycling program.

Materials prepared by CWS have been utilized by New Hampshire communities seeking to promote recycling and reuse. For example, the General Services Department for the City of Concord utilized an excerpt from the CWS flyer on its official Twitter account (Figure 7, below) and included a link to the "Truth About Recycling" flyer on its website to better educate the public

on recycling.[23] The Public Works Division for the City of Nashua also provides this flyer on its website to promote recycling.[24]

[23] City of Concord, Concord General Services, http://concordnh.gov/912/Recycling (last visited February 25, 2020).
[24] City of Nashua, Nashua Solid Waste Department, https://www.nashuanh.gov/435/Recycling (last visited February 25, 2020).

north country ENVIRONMENTAL SERVICES
A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

March 20, 2020

NHDES, Waste Management Division
Solid Waste Management Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

RE: North Country Environmental Services, Inc.
Landfill Facility – Bethlehem, NH
NHDES Permit # DES-SW-SP-03-002
2019 Annual Facility Report

Dear NHDES Waste Management Division:

Consistent with Env-Sw 1105.07(b) of the New Hampshire Department of Environmental Services Solid Waste Rules, North Country Environmental Services, Inc. writes to provide the 2019 Annual Facility Report (attached) for our facility located in Bethlehem, New Hampshire.

We are also providing a revised monthly origin material report for February 2019. We found a tonnage discrepancy from the original report and apologize for the error. Should you have any questions please do not hesitate to contact me at 802.651.5454.

Sincerely,

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

J. Gay

John Gay, E.I.
Permits, Compliance & Engineering

Enclosures

c. Kevin Roy, North Country Environmental Services, Inc. {via email}
Annette Marquis, North Country Environmental Services, Inc. {via email}

RpOrgWs.rpt

Origin: All
Material: All

Correct Report 3-20-2020

NORTH COUNTRY ENVIRONMENTAL SERVICES INC

Origin/Material Report

Transactions from 02/01/2019 through 02/28/2019
Inbound Tickets Only
Third Party and Intercompany Customers
Recycle and Disposal Material
Material Summary

	Cubic Yards	Tons	Est Tons	Tax
MA - MASSACHUSETTS				
CD - CONSTRUCTION DEBRIS *13 tickets and 13 transactions*	0.00	337.58	0.00	$0.00
ICMS - IC MSW *22 tickets and 22 transactions*	0.00	645.64	0.00	$0.00
ICSW - IC SLUDGE *59 tickets and 59 transactions*	0.00	1,971.61	0.00	$0.00
IN - INDUSTRIAL WASTE *1 ticket and 1 transaction*	0.00	1.47	0.00	$0.00
KS - CONTAMINATED SOIL FOR DISPOSAL *1 ticket and 1 transaction*	0.00	22.04	0.00	$0.00
MC - COVER MATERIAL *50 tickets and 50 transactions*	0.00	1,416.61	0.00	$0.00
RB - ROAD BASE *1 ticket and 1 transaction*	0.00	22.93	0.00	$0.00
MA - MASSACHUSETTS	0.00	4,417.88	0.00	$0.00
NH - NEW HAMPSHIRE				
FS - FOUNDRY SAND *11 tickets and 11 transactions*	0.00	102.05	0.00	$0.00
ICCB - IC CONT CONCRETE BLOCKS *3 tickets and 3 transactions*	0.00	57.46	0.00	$0.00
ICCD - IC CONSTRUCTION AND DEMO *161 tickets and 161 transactions*	0.00	3,958.44	0.00	$0.00
ICFS - IC FOUNDRY SAND *2 tickets and 2 transactions*	0.00	57.77	0.00	$0.00
ICIN - IC INDUSTRIAL WASTE *1 ticket and 1 transaction*	0.00	7.92	0.00	$0.00
ICMC - IC COVER MATERIAL *33 tickets and 33 transactions*	0.00	617.67	0.00	$0.00
ICMS - IC MSW	0.00	5,174.36	0.00	$0.00

234 tickets and 234 transactions				
ICMX - IC MIXED MSW *46 tickets and 46 transactions*	0.00	1,363.90	Exhibit 0.00 Aff. of Swan	$0.00
IDBT - BULKY BY TON - NH ONLY *2 tickets and 2 transactions*	0.00	1.40	0.00	$0.00
IDCD - ID C & D - NH ONLY *102 tickets and 102 transactions*	0.00	626.48	0.00	$0.00
IDMS - ID MSW - NH ONLY *166 tickets and 166 transactions*	0.00	1,451.90	0.00	$0.00
IN - INDUSTRIAL WASTE *7 tickets and 7 transactions*	0.00	64.10	0.00	$0.00
MC - COVER MATERIAL *35 tickets and 35 transactions*	0.00	612.70	0.00	$0.00
RB - ROAD BASE *21 tickets and 21 transactions*	0.00	666.75	0.00	$0.00
NH - NEW HAMPSHIRE	0.00	14,762.90	0.00	$0.00
VT - VERMONT				
ICCD - IC CONSTRUCTION AND DEMO *1 ticket and 1 transaction*	0.00	5.65	0.00	$0.00
ICMS - IC MSW *29 tickets and 29 transactions*	0.00	218.17	0.00	$0.00
MS - MSW OUTSIDE OF NH *6 tickets and 6 transactions*	0.00	112.00	0.00	$0.00
VT - VERMONT	0.00	335.82	0.00	$0.00
Report Grand Totals	0.00	19,516.60	0.00	$0.00

End of Report

ANNUAL FACILITY REPORT
Active Solid Waste Facilities
Reporting Year 2019

Complete and return this form by ***MARCH 31*** to:

NHDES, Waste Management Division, SWMB
PO Box 95, Concord, NH 03302-0095
(603) 271-2925 or solidwasteinfo@des.nh.gov
https://www.des.nh.gov

RSA 149-M/Env-Sw 1105.07

1. Facility Identification (Env-Sw 1105.13(a))

Facility Name NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.	
Physical Street Address 581 TRUDEAU ROAD	
Town/City BETHLEHEM	Permit Number DES-SW-SP-03-002

2. Permittee Information (Env-Sw 1105.13(b))

Name NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.		
Mailing Address P.O. BOX 9		
Town/City BETHLEHEM	State NH	ZIP Code 03574
Email Address kevin.roy@casella.com	Daytime Phone Number (603) 869-3366	

3. Contact Person

Name JOHN GAY	Job Title ENGINEER
Affiliation EMPLOYEE	
Email Address joe.gay@casella.com	Daytime Phone Number (802) 223-5973

4. Facility Status (Env-Sw 1105.13(d))

- ☒ Operated the entire calendar year.
- ☐ Did not operate in the calendar year.
- ☐ Operated part of the calendar year only.
  Started operating on ____/____/2019 (Month / Day) Stopped operating on ____/____/2019 (Month / Day)

5. Facility Status – *Operating Landfills Only* (Env-Sw 1105.13(d))

Estimated remaining life (in years). as of March 31, 2020 +/- 1 year
Estimated remaining permitted capacity (in cubic yards) as of 12/31/2019. +/- 331,000 cy
Attach a brief summary of facility inspection and maintenance activities in accordance with Env-Sw 806.08(j).

6. Facility Operator Information (Env-Sw 1105.13(c))

Name	Certificate Number	Expiration Date	Still Working at Facility as of December 31?
1. See attached		/ /	☐ Yes ☐ No
2.		/ /	☐ Yes ☐ No
3.		/ /	☐ Yes ☐ No
4.		/ /	☐ Yes ☐ No
5.		/ /	☐ Yes ☐ No

☒ Additional Facility Operator Information is attached to this Annual Facility Report.

7. Waste and Recyclables Received & Shipped (Env-Sw 1105.13(e), Env-Sw 1105.13(f))

Type of Waste

Note: Universal Wastes and Used Oil are included in Section 11, so do not enter them here.

☒	Ash	☐	Electronic Waste	☒	Scrap Metal
☐	Asbestos	☐	Food Waste	☐	White Goods
☒	Bulky Waste	☐	Infectious Waste	☒	Other: Approved Special Waste
☒	C&D Debris	☒	Municipal Solid Waste	☒	Other:
☒	Contaminated Soil	☐	Recyclable Materials	☒	Other:

Quantity of Waste

Quantity of Waste Received			Quantity of Waste Shipped	
Non-Recyclable Waste Received:			Non-Recyclable Waste Shipped:	
From NH Sources	233487.63 tons		To NH Destinations	0 tons
From Out-of-State Sources	113345.11 tons		To Out-of-State Destinations	0 tons
Total Received	346832.74 tons		Total Shipped	0 tons
Recyclables Received:			Recyclables Shipped:	
From NH Sources	59.96 tons		To NH Destinations	tons
From Out-of-State Sources	tons		To Out-of-State Destinations	56.57 tons
Total Received	59.96 tons		Total Shipped	tons

8. Estimated Quantity of Waste Stored at the Facility as of December 31, 2019 (Env-Sw 1105.13(i))

Type of Waste	Quantity Onsite as of Dec. 31		Type of Waste	Quantity Onsite as of Dec. 31
Ash	tons		Municipal Solid Waste	tons
Asbestos	tons		Recyclable Materials	tons
Bulky Waste	tons		Scrap Metal	5.39 tons
C&D Debris	tons		White Goods	tons
Contaminated Soil	tons		Other:	
Electronic Waste	tons		Other:	
Food Waste	tons		Other:	
Infectious Waste	tons		Other:	

9. Bypass and Residual Waste (Env-Sw 1105.13(g))

Note: Please refer to the instructions for definitions of bypass waste and residual waste.

Waste	Total Quantity Generated	Quantity Shipped to NH Destination(s)	Quantity Shipped to Out-of-State Destination(s)
Bypass Waste	tons	tons	tons
Residual Waste	tons	tons	tons
Leachate	8190236 gallons	7992895 gallons	97174 gallons

10. Facilities Producing Certified Waste-Derived Products (Env-Sw 1105.13(h))

Type of Waste-Derived Product Produced	Quantity Produced	Quantity Distributed for Use	Estimated Quantity Stored at Facility as of December 31
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons
	tons	tons	tons

☒ I certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500.

OR

☐ I CAN NOT certify that all waste-derived products distributed by the facility for use met the applicable standards for distribution and use pursuant to Env-Sw 1500, and have attached a detailed explanation of the situation and actions taken or being taken to remedy the problem.

11. Other Activities Taking Place at the Facility

☐	Burn Pile	☐	Refrigerant Removal	☐	Swap Shop
☐	Food Waste Composting	☐	Leaf & Yard Waste Composting	☐	Other:
☐	Used Oil Collection	☐	Sharps Collection	☐	Other:
☐	Used Oil Burner: EPA ID No. NHD				
Universal Waste Collection					
☐	Antifreeze	☐	Batteries (Rechargeable)	☐	Fluorescent Lamps
☐	Batteries (Automotive)	☐	Cathode Ray Tubes (CRTs)	☐	Mercury-Containing Devices

12. Summary and Assessment of Environmental Monitoring (Env-Sw 1105.13(j))

☐ None required and none undertaken.

☐ None required, but environmental monitoring was undertaken voluntarily. A summary and assessment of the environmental monitoring is attached.

☒ Environmental monitoring is required by this facility's permit and/or the Solid Waste Rules. A summary is:

☐ Attached to this report; or

☒ Provided in the following documents previously submitted to NHDES as indicated below:

Date Submitted **Title of Document** **Type of Monitoring**

13. Public Benefit Discussion (Env-Sw 1105.13(k))

☐ Permit does not include a public benefit condition. No discussion is required.

☒ Permit includes a public benefit condition. A discussion is attached to this report.

14. Compliance Certification (Env-Sw 1105.13(l) or Env-Sw 1105.13(m))

I certify that the facility is in compliance with the requirements of the following:

Yes	No	N/A	
☒	☐		The facility's current operating plan.
☒	☐		All terms and conditions of the facility's permit.
☒	☐	☐	Env-Sw 900 for asbestos, ash, contaminated soils, infectious waste, and/or tires.
☐	☐	☐	Env-Hw 1100 for the management of Universal Wastes.
☐	☐	☐	Env-Hw 807 for the management of Used Oil.
☐	☐	☐	Env-A 1000 for the operation of a burn pile.

If you checked "No" to any of the above, attach an explanation and proposed schedule for achieving compliance.

15. Signature (Env-Sw 1105.13(o))

By signing below, I affirm that the material and information submitted in this report is correct and complete to the best of my knowledge and belief, and that I am the permittee or a person duly authorized to sign for the permittee.

J. GAY — 3/20/20

Signature of Permittee or Duly Authorized Individual — Date

JOHN GAY — ENGINEER

Printed Name — Title

This report contains 59 attached pages.

Facility Name: NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

2019 ANNUAL FACILITY REPORT

6. Operator Information (Env-Sw 1105.13 (c)

Name:	Certification #:	Expiration Date:	Still Working at Facility as of Dec. 31st?
Stephen Allen	003076	5/10/2020	☒ No
Don Dunn	000513	3/15/2020	☒ Yes
John Gay	004082	9/4/2020	☒ Yes
Bruce Grover	005278	1/20/2021	☒ Yes
Linda Holley	005990	5/3/2020	☒ Yes
Nathan Huntington	004554	1/11/2021	☒ Yes
Thomas Jeffries	003060	10/3/2020	☒ Yes
Sherri Lincoln	005059	4/19/2020	☒ Yes
Annette L Marquis	003489	11/30/2020	☒ Yes
Paul J Moroney	002944	11/16/2020	☒ Yes
Jonathan Reed	005982	8/8/2020	☒ Yes
Kevin A Roy	002543	6/2/2020	☒ Yes
Daniel Smith	005283	1/29/2021	☒ Yes
Scott Stevenson	005966	5/3/2020	☒ Yes
Aldis Wright	004949	12/14/2020	☒ Yes
Terence Wright	004699	9/29/2020	☒ Yes

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.
2019 ANNUAL FACILITY REPORT

SECTION 5 Summary of Facility Operations and Maintenance Activities.

North Country Environmental Services has conducted environmental monitoring and inspections according to the rules and regulations of the State of New Hampshire and the Facility Operating Plan throughout the year. These include but are not limited to;

1. Tri Annual Groundwater Monitoring
2. Quarterly & Annual compliance with our Multi Sector General Permit,
3. Monthly Spill Prevention Control & Countermeasures Plan inspections
4. Quarterly gas probe sampling,
5. Title V Quarterly and Annual compliance reporting,
6. Monthly NHDES Solid Waste Management Operational Reports,
7. Random Load Inspections,
8. Odor Complaint Logs,
9. Leachate Disposal reporting requirements for the Vermont Agency of Natural Resources, City of Plattsburgh NY, Cities of Franklin and Concord NH,
10. Tri-annual NHDES Leachate Reporting
11. Safety Inspections & Training,
12. Landfill gas well tuning,
13. Landfill Surface Emission scans,
14. Landfill Cover Integrity Inspections.

Save Forest Lake
February 3 ·

This from the Casella Waste Systems FB page. Note how once again, Casella Waste Systems, (that self-titled "champion of the environment and sustainability" for the past 40 years), piggy-backs off of the efforts of OTHERS to REDUCE the amount of waste going into their landfills. This is a very unscrupulous company that only cares about the bottom line and not the environment. Otherwise, they would have been leading the way to reduce what we waste. Their "Zero-Sort" single-stream recycling program helped collapse the Asian market with its high-rate of contamination, ultimately leading to more recyclable product being landfilled. Of course, Casella's business plan solely focuses on profiting from what we waste. Just wish they'd be honest about that. We do not want this poorly-run garbage profiteer and polluter any where near Forest Lake and we look forward to their expulsion from Bethlehem in or before 2023. Unless, of course, they go back on their word, again, and seek expansion there by trying to pack the Select Board. We'll see. #Unscrupulos #DumpCasella! #SaveForestLake

Casella Waste Systems
January 27 ·

Like Page

Out with the old, in with the new. Plastic bag bans launch in New York State on March 1, Maine on April 22, and Vermont in July, so now is a great time to start a new habit of

RECYCLING COMMODITY UPDATE

— MAY 2018 —

THE FACTS

- China was the largest buyer of mixed paper in 2017, representing over 55% of worldwide demand. The U.S. alone shipped 15 million tons per year of this material to China.
- China enacted The National Sword Program in 2017 to cut down on the amount of "carried waste" being sent into the country as an initiative to combat pollution.
- China has banned 24 types of materials that were previously entering their country as recyclables. The largest ban that has impacted the U.S. recycling industry has been the ban on mixed paper (junk mail/scrap paper).
- For all other finished recyclables imported to China, the specifications are now at a 0.5% contamination rate, reduced from the industry standard of 3%.
- The pressure on secondary markets (India, Korea, etc.) to absorb this excess material is significant, and ocean freight costs to reach these markets is up over 100%.
- The Northeast U.S recently lost its only "bottle-to-bottle" glass processor.

THE CONSEQUENCES

- The market value for mixed paper is down over 90% and – rather than generating revenue from this material – recyclers now have to pay to get rid of it.
- The overall value of the traditional recycling stream has seen a reduction of 63% over the past 12 months.
- Having lost "bottle-to-bottle" glass processing, there are no markets for glass in the Northeast. Therefore, glass is being disposed at a cost.

CALL TO ACTION

We believe in sustainability, and in working towards the conservation and renewal of resources. We have deliberately made this ethic visible in our mission, investments and business priorities.

However, this is a crisis moment – for recycling, and for sustainability. New solutions will require the collaboration and commitment of a number of stakeholders.

Companies That Recycle: Continue to invest in new technology to deliver better, less-contaminated sorting capability. Also, recyclers must aggressively work to identify and develop new markets and uses for recyclable materials.

Customers: Work to reduce contamination at the source and put cleaner material at the curb. Intentionally and deliberately reduce material, such as plastic grocery bags, items that tangle, textiles and food waste.

Regulators, Lawmakers, and Municipal Policy Makers: Require the beneficial use of glass, such as its use as an aggregate in road construction and repair. Remove glass from lists of materials banned from disposal. If markets outside of China for mixed paper become over-saturated, it may become necessary to discuss removing junk mail and mixed paper from the required recycling stream and collect newsprint only. Expand disposal capacity.

City working on plan to reduce recycling contamination

pressherald.com/2020/02/20/city-working-on-plan-to-reduce-recycling-contamination/

By Chance Viles American Journal

February 20, 2020

Dirty recycled materials cause waste companies to treat whole recycle loads as trash*Chance Viles / American Journal*

WESTBROOK — The city is looking to reduce costly recycling contamination by using a program that has been successful in neighboring communities.

Sustainability Coordinator Lynn Leavitt said she'd like to employ interns to check residents' recyclable bins and then inform the residents when they were disposing of materials that aren't recyclable or are unacceptable because they havem't been cleaned.

But in order to cost-effectively use paid interns, the city must first find out which recycling routes have the most contaminated recycling bins, and it hopes to create a regular "recycling audit" to identify those areas, Leavitt said.

Casella Waste Systems has been charging the city roughly $5,000 a month over the past year to dispose of unacceptable recycled material collected from recycling bins. The items have been contaminated with food waste, for example, or they are not allowed in the first

place, such as electronics. That fee comes on top of the $25,000 the city pays per month for regular waste removal, according to City Administrator Jerre Bryant.

Leavitt

“We looked at some other towns who tried out a pilot program and it was successful, but we couldn’t have enough interns to do the entire city, so we have to find out the best placement for them,” Leavitt said.

Interns in Windham, Falmouth, Scarborough and South Portland patrolled those communities’ recycling bins last summer, sticking colored tags on bins to grade residents’ sorting performance. The residents then typically corrected their own actions.

South Portland reduced contamination in its targeted areas by 55 percent, said that city’s sustainability coordinator, Julie Rosenbach.

“It went extremely well,” Rosenbach said. “We covered 25 percent of residents in the city, and that’s a big percentage for (the interns) to tag, and they did great.”

Related

Communities plan to continue recycling outreach

Rosenbach said South Portland residents enjoyed the interns and were happy to learn how they did at recycling and what they were doing wrong.

South Portland uses ecomaine for waste management, a company that offers recycling contamination audits regularly to point out problem areas, and that made it easy for the interns to get right to work. Westbrook officials are working with Casella to create an audit that will provide information on the trouble spots.

“We are working something out. Once we know where to target, we should be able to reduce contamination much more effectively,” Leavitt said.

In previous years, Westbrook and other cities only had to pay for disposal of trash. Waste management companies did not charge to accept recyclables, even those that were contaminated, because they could sell that material overseas at a profit. A tougher recyclable market now, however, has put an end to that practice.

“About two years ago, China decided that it was going to set new standards for the import of recyclables and how much contamination they could contain,” said Casella Vice President Joe Fusco. “They chose a number of one-half of 1%, or it would be rejected. That number is beyond the capability of any technology or process that exists today.”

After the regulation change, the market for recyclable material collapsed, Fusco added.

“The average price of paper dropped 90 percent, and the overall value of recyclable commodities, paper, plastic and all other things, dropped about 65 percent. Now, that’s an economic problem,” Fusco said.

About 50 tons of recyclable material comes out of Westbrook each week, Leavitt said. Of that, only about 20-30 tons actually get recycled, and the city is being charged for the incineration or landfilling of the contaminated batches.

“We tried to educate people before, and when we did we did saw a drop in contamination,” Leavitt said. “It is hard though. That number went right (back) up, so it takes time and effort to reduce (contamination).”

The first thing to do is educate people about what can and cannot be recycled, she and Fusco said.

“We have to stop the problem where it begins, the mudroom or right in the bin,” Fusco said. “Homeowners, municipalities, companies, have grown complacent on what is recyclable. … We need to learn what to toss out and recycle better.”

Comments are not available on this story.

Save Forest Lake
December 29, 2019 ·

Piecing together some "juicy" (pun intended) news from our friends in Vermont relative to our favorite corporate predator, Casella Waste Systems. This so-called environmental steward has apparently managed to dump 8000 gallons of leachate from its Coventry landfill into the Black River, which ultimately feeds into Lake Memphremagog (a source of drinking water for many) early on Friday, Dec 27th at around 3am (seemingly a violation in itself as work is not supposed to begin til 6am). Now, do we need this at Forest Lake? I think not. Apparently, it has not been covered yet by VT news due to the holiday weekend, but keep your eyes peeled. This is what we want to PREVENT!!! PLEASE SHARE!!

We were able to receive a copy of the response to local officials, 14 hours after the fact, from Casella:

From: Joe Gay <John.Gay@casella.com>
Date: Fri, Dec 27, 2019, 4:23 PM
Subject: MBI Truck Accident
To: Coventry Planning Commission <planningcommission@coventryvt.org>, Amanda Carlson <selectboardclerk@coventryvt.org>, Laura Dolgin <laura.dolgin@newportvermont.org>, Paul Monette (Paul.Monette@newportvermont.org) <Paul.Monette@newportvermont.org>, Kirsten Sultan (kirsten.sultan@vermont.gov) <kirsten.sultan@vermont.gov>, dsnedeker@nvda.net <dsnedeker@nvda.net>, Bourdeau, Jeff <Jeff.Bourdeau@vermont.gov>, dennis.fekert@vermont.gov <dennis.fekert@vermont.gov>, Pete LaFlamme (pete.laflamme@vermont.gov) <pete.laflamme@vermont.gov>, DUMP <documents4dump@gmail.com>
Cc: Russell Anderson <russell.anderson@casella.com>, Samuel Nicolai <Samuel.Nicolai@casella.com>, Jeremy Labbe <Jeremy.Labbe@casella.com>, Patricia Geoffroy <Patricia.Geoffroy@casella.com>, Kimberly Crosby <Kimberly.Crosby@casella.com>, Shelley Sayward <Shelley.Sayward@casella.com>

Dear all,

We wanted to follow up to an incident that occurred early this morning in Coventry if you not have already learned of it.

This morning, an empty MBI transfer trailer jackknifed within the roadway just north of the Route 5 / Route 100 intersection.

The tractor and trailer was disabled due to black ice.

While the driver was outside the truck deploying safety triangles, a loaded leachate tanker traveling southbound on Route 5 [illegible] driver could not stop the vehicle, tried to maneuver the truck to safety and lost control. The loaded tanker not only hit the transfer trailer but the driver of the trailer as

well, he was transported to the North Country Hospital.

Needless to say the tanker was compromised and lost several fluids including the leachate from the tanker.

Regulatory agencies were notified and the VT Spill Response Detachment coordinated the cleanup which I believe is still on-going; oil, hydraulic fluid, diesel fuel and leachate.

Route 5 was closed for an extended duration today and as I understand, is open now to one lane bypass.

We wanted to make you all aware of the incident.

John Gay, E.I.

Region Engineer

Casella Waste Systems, Inc.

1855 VT Route 100, Hyde Park, VT 05655

8 11 Comments 11 Shares

Like Comment Share

All Comments

Write a comment...

Martha May Sylvester So, this spill was roughly a 3/4 mile at most, down river of my drinking water sources wellhead!!! I'm also the elected Clerk of said public water system and I do not see any Officer of our Fire District included in this email notification, interesting I get to read it on a fellow New Hampshire #WaterWarriors Facebook page !!! #WaterIsLife PFAS are forever ... Thanks for sharing as I'm still waiting for a Reply from Casella's site manager...
(CFD#1 Chair was contacted by hazmat)... #CoventryLife #BeTheChange

Like · Reply · 17w · Edited

Author

Save Forest Lake Well, in all fairness, we only learned of it from our allies in VT...the power of strong networks and alliances!!

Like · Reply · 17w

Joshua Casey Martha May Sylvester boo hoo... so selfishly put. Accidents happen everyday. Hazmat is on it. Someone was injured but not one of you fanatics can look beyond your perfect lives. You should be ashamed

Like · Reply · 17w

Martha May Sylvester Joshua you know nothing of me! Boo hoo because I want accountability, you sound rediculous. I already know the status of the injured employee as I am engaged deeply in my community. Those trucks were breaking rules and as a consequence a worker was injured and water source contaminated!!! That is on Casella not me , but nice try on that spin 😉

Like · Reply · 17w · Edited

Joshua Casey Martha May Sylvester federal law states removal of leachate is not bound by operational hours of a facility and can in fact be removed 24-7 365. Fun fact 😎 🌬️ 🌈

Like · Reply · 17w

Martha May Sylvester Interesting as the state of Vermont has regulated the roads they are allowed to travel on, times of operation and even the facilities that can accept leachate, but hey , I get it, as the landfill franchise tax pays the administarative costs of the very agency (120,000 a fiscal year) that is suppose to regulate and enforce, or the large amount of "waste lobbyists" in Montpelier , or the state allowing Casella to manage and operate the state's failing & flawed recycling, while being the ONLY landfill for an entire state , or the fact that Casella is 1 of 2 publicly traded companies in Vt or the fact that tip fees were increased in July .. Yeah I'd say I get it as I follow the money and engage with Casella and even work with them.! #IFollowTheMoney ...

Like · Reply · 17w

Author

Save Forest Lake #FollowTheMoney hey, apparently they reached out to Bernie Sanders as I was removed from the "Corporate Greed" panel yesterday...#ConnectTheDots

Like · Reply · 17w

Martha May Sylvester Sanders did not personally remove you and I won't be letting that go!

Like · Reply · 17w

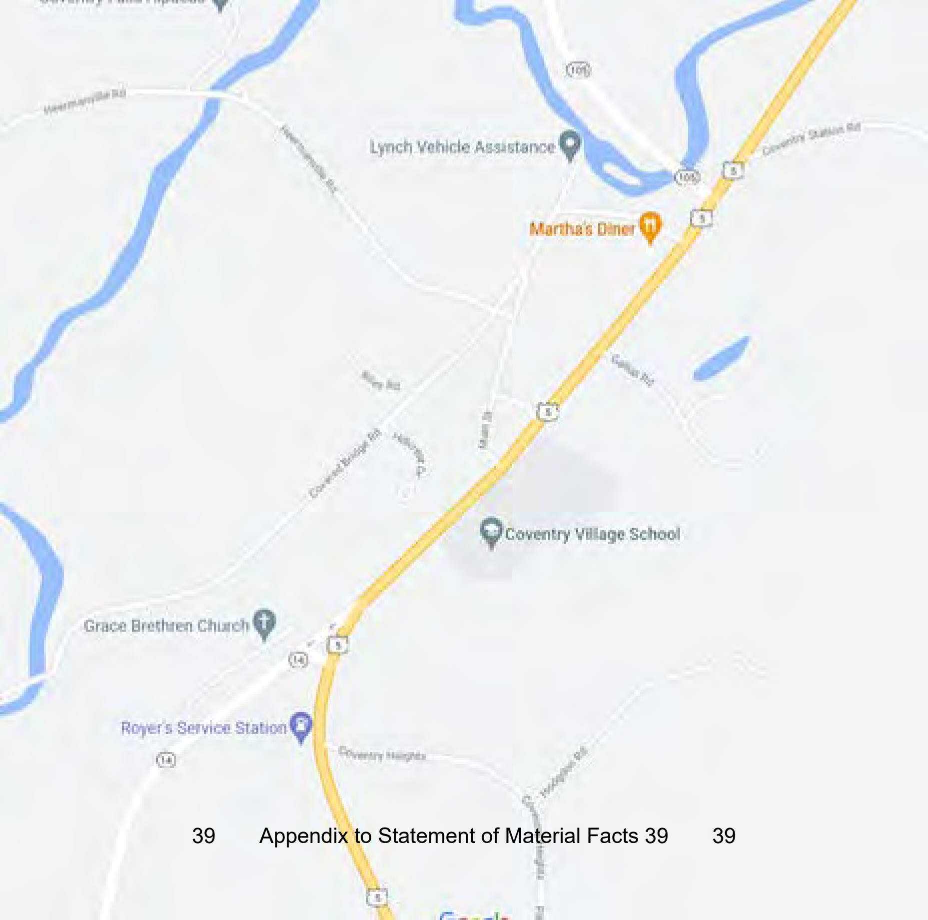
Write a reply...

Joshua Casey Hope the driver is ok. Prayers for him and the family. 😢

Like · Reply · 17w

Author

Save Forest Lake https://www.wcax.com/.../icy-roads-lead-to-tractor...



Lynch Vehicle Assistance
Martha's Diner
Coventry Village School
Grace Brethren Church
Royer's Service Station

ENERGY & ENVIRONMENT

Coventry tanker crash causes landfill contaminant spill, injures 1

By Justin Trombly
Dec 30 2019

Waste is dumped in the Coventry landfill and then covered with soil. File photo by Mike Dougherty/VTDigger

Cleanup is continuing after a semi-truck collision in Coventry caused about 8,000 gallons of leachate from the town's Casella Waste Systems landfill to spill from a ruptured tanker truck.

The incident happened at about 3 a.m. Friday, according to Vermont State Police, near the intersection of U.S. Route 5 and State Route 14. The tanker struck a trailer truck that had crashed in the road, leaving one driver injured.

As of Monday, officials had no indication that the spill affected the nearby Black River, Department of Environmental Conservation analyst Shawn Donovan said.

Both vehicles were operated by subcontractors of Casella, said the company's vice president, Joe Fusco, and were not Casella trucks. He said each was likely traveling to a location outside the area.

Troopers said Jean Paul Lamoureux, 64, of Newport crashed his 2006 Kenworth semi-truck in freezing rain and icy road conditions. The Kenworth was an empty trailer truck, Fusco said, and was likely headed to make waste pickups.

Lamoureux began setting up safety triangles outside the truck when a semi-truck transporting landfill leachate came down the road, according to Casella engineer Joe Gay, who emailed state and local officials about the incident Friday.

That truck, a 2016 Kenworth, was driven by 31-year-old Onnie Hart, state police said. Fusco said Hart was

stained head and neck injuries and was taken to North Country Hospital in Newport.

Donovan, from the DEC, said that about 8,000 gallons of leachate spilled from the tanker, as well as several dozen gallons of diesel.

Donovan said the state sent a contractor to the site to remove contaminated ice, snow and soil. The contractor was still working as of Monday, Donovan said.

Gay said in his email that oil and hydraulic fluid also spilled as a result of the collision. State hazmat crews also went to the site, troopers said.

Fusco said Casella has a "great deal of concern for the health of the driver who was injured."

"In our industry, we hate to see these kinds of things happen," he said.

The trooper handling the case was not available for comment about Lamoureux's condition Monday afternoon.

Casella spokesperson Joe Fusco sits in front of a diagram of the Coventry landfill's liner system. Photo by Mike Dougherty/VTDigger

Leachate from the Casella landfill has been a primary focus of environmental groups in the area, most notably the group Don't Undermine Memphremagog's Purity, or DUMP.

DUMP spent months vocally opposed to the landfill's expansion, raising concerns about runoff into nearby bodies of water.

Newport resident Pam Ladds, a member of the group, said she was sad to hear about the incident and blamed no one for the collison.

"But this was an accident waiting to happen," Ladds said. "Those tanker trucks are enormous. They're carrying a very heavy load."

Ladds said the possibility of spills was a reason the group opposed the landfill expansion, and she wonders whether the fluids released Friday had fouled any surrounding watersheds.

SHOP

Joff contributed reporting to this story.

[REPORT AN ERROR] [**UPLOAD A DOCUMENT**][**TIP DROP**]

Don't miss a thing. Sign up here to get VTDigger's weekly email on the energy industry and the environment.

Subscribe

Filed under:

ENERGY & ENVIRONMENT

Tags: Casella Waste Systems, Coventry, Coventry landfill, Department of Environmental Conservation, Joe Fusco, Shawn Donovan

About Justin

Justin Trombly covers the Northeast Kingdom for VTDigger. Before coming to Vermont, he handled breaking news, wrote features and worked on investigations at the Tampa Bay Times, the largest newspaper in Florida. He grew up across Lake Champlain in upstate New York, where he worked for The Buffalo News, the Glens Falls Post-Star and the Plattsburgh Press Republican. He studied English and political science at the University of Rochester.

Email: jtrombly@vtdigger.org

View all stories by Justin Trombly

Send us your thoughts

VTDigger is now accepting letters to the editor. For information about our guidelines, and

Search Facebook

Bethlehem, NH, USA. **Local Chat**

Public group · 1.5K members

About · Discussion · Members · Events · Media · Files

Join Group

About

This group is for open respectful interactions among people who live in and/or care about Bethlehem, New Hampshire.

Public
Anyone can see who's in the group and what they post.

Visible
Anyone can find this group.

Bethlehem, New Hampshire

General Group

Save Forest Lake
December 29, 2019 ·

Piecing together some news from our friends in Vermont relative to Casella Waste Systems and a bad environmental accident that occurred over the weekend in VT. Apparently 8000 gallons of leachate from its Coventry landfill has found its way into the Black River, which ultimately feeds into Lake Memphremagog (a source of drinking water for many) early on Friday, Dec 27th at around 3am (seemingly a violation in itself as work is not supposed to begin til 6am). Now, do we need this in Dalton at Forest Lake? I think not. Apparently, it has not been covered yet by VT news due to the holiday weekend, but keep your eyes peeled. This is what we want to PREVENT next to Forest Lake or in Whitefield on the Johns River!!!

We were able to receive a copy of the response to local officials, 14 hours after the fact, from Casella:

From: Joe Gay <John.Gay@casella.com>

Date: Fri, Dec 27, 2019, 4:23 PM

Subject: MBI Truck Accident

To: Coventry Planning Commission <planningcommission@coventryvt.org>, Amanda Carlson <selectboardclerk@coventryvt.org>, Laura Dolgin <laura.dolgin@newportvermont.org>, Paul Monette (Paul.Monette@newportvermont.org) <Paul.Monette@newportvermont.org>, Kirsten Sultan (kirsten.sultan@vermont.gov) <kirsten.sultan@vermont.gov>, dsnedeker@nvda.net <dsnedeker@nvda.net>, Bourdeau, Jeff <Jeff.Bourdeau@vermont.gov>, dennis.fekert@vermont.gov <dennis.fekert@vermont.gov>, Pete LaFlamme (pete.laflamme@vermont.gov) <pete.laflamme@vermont.gov>, DUMP <documents4dump@gmail.com>

Cc: Russell Anderson <russell.anderson@casella.com>, Samuel Nicolai <Samuel.Nicolai@casella.com>, Jeremy Labbe <Jeremy.Labbe@casella.com>, Patricia Geoffroy <Patricia.Geoffroy@casella.com>, Kimberly Crosby <Kimberly.Crosby@casella.com>, Shelley Sayward <Shelley.Sayward@casella.com>

Dear all,

We wanted to follow up to an incident that occurred early this morning in Coventry if you not have already learned of it.

This morning, an empty MBI transfer trailer jackknifed within the roadway just north of the Route 5 / Route 100 intersection.

The tractor and trailer was disabled due to black ice.

While the driver was outside the truck deploying safety triangles, a loaded leachate tanker traveling southbound on Route 5 whose driver could not stop the vehicle, tried to maneuver the truck to safety and lost control. The loaded tanker not only hit the transfer trailer but the driver of the trailer as well, he was transported to the North Country Hospital.

Needless to say the tanker was compromised and lost several fluids including the leachate from the tanker.

Regulatory agencies were notified and the VT Spill Response Detachment coordinated the cleanup which I believe is still on-going; oil, hydraulic fluid, diesel fuel and leachate.

Route 5 was closed for an extended duration today and as I understand, is open now to one lane bypass.

We wanted to make you all aware of the incident.

John Gay, E.I.

Region Engineer

Casella Waste Systems, Inc.

1855 VT Route 100, Hyde Park, VT 05655

16 · 46 Comments 4 Shares

Like · Share

Jeanne Louise
Thanks for info. I am sure NH DES would be interested.
Like · Share · 1y

Save Forest Lake
Such a comedienne
Like · Share · 1y · 2

Save Forest Lake
https://www.wcax.com/.../Icy-roads-lead-to-tractor...
WCAX.COM
Icy roads lead to tractor-trailer crash in Coventry
Like · Share · 1y · Edited

Michelle Casey
I hope both drivers and their families will have a full recovery.
Like · Share · 1y · 6

Don Huerter
Michelle Casey Wow, you totally missed the whole point. Nobody cares about the human lives involved here. This is just about making the most of every opportunity to smear Casella. This is about important things like NIMBY and property values. You silly girl, worrying about a couple of worthless truck drivers.
Like · Share · 1y · 7

Gayle Popielaski Huerter
Don Huerter Very sad - I agree with you **Michelle** but Don is right
🙏
Like · Share · 1y · 1

Wendy M. Whiton
Gayle Popielaski Huerter that is absolutely not true! If we didn't care about human lives, none of the environmental concerns would matter at all 😦
Like · Share · 1y · 6

Save Forest Lake
Wendy M. Whiton Well said...amazing how people will twist things. Why on earth would Casella have truckers driving at 3am in such poor conditions?
Like · Share · 1y · 5

Wendy M. Whiton
Jon Swan on the flip side, I don't understand how people can defend them NO MATTER WHAT they do!?! This is the town where I grew up and my children grew up and I don't want to see it poisoned for corporate greed...it breaks my heart!
😦
Like · Share · 1y · 5

Michelle Casey
Truckers don't have a 9 to 5 and the rd conditions change in a heart beat. They were not the only truckers on the roads guaranteed. But they were unfortunate to have an accident.
Like · Share · 1y

Save Forest Lake
Wendy M. Whiton Crazy, isn't it?
Like · Share · 1y · 1

Save Forest Lake
Michelle Casey Oh goodness, you know Casella dictates the terms for truck routes, etc. and since these were MBI vehicles, they most certainly have control. This is no different than trucks going up and down Trudeau Road at 3am as it was at Rt 5 and 100, as reported. Will be interesting to see how the permitting authorities handle this one, and how much leachate spilled into the river. 12 hour road closure does not sound promising for the people who rely on that river and lake as their source for drinking water.
Like · Share · 1y · 1

Mary Bois
No trucks on Trudeau at 3 am
Like · Share · 1y

Jeanne Louise
Mary Bois Certainly used to be until citizens started videoing them!
Like · Share · 1y · 2

Mary Bois
Hope they are all ok !!!
Like · Share · 1y · 2

Trevor Mallow
I've tried to stay out of this whole discussion but jfc you anti Casella people will latch on to anything you can fucking get to condemn them. Now you are blaming a traffic accident resulting from weather conditions on them. Jesus fucking wept. It must be nice to not have any other pressing matters in your life that this is how you spend your time.
Like · Share · 1y · 6

Save Forest Lake
LOL, welcome to my life, Trevor! This is one ugly beast I look forward to slaying. As for blame, it is their company, right? I would think their permit does not allow trucks to be rolling in or out of the facility until 6am, as I understand it. So, yes, it would appear to be their fault, as it's their operation, and their workers hurt. I hope multi-millionaire John Casella coughs up the dough to compensate his employees and their families impacted by this accident that should not have happened at all. Not to mention the concern now for those who draw their drinking water from the nearby lake. There should be consequences. But, to loop back, I've found myself a fantastic life in this beautiful part of the country and I'm not going to sit idly by while this parasite of a corporation moves forward with plans for yet another landfill in our wonderful neck of the woods. We all deserve better. We wouldn't even be having this discussion if their own greedy practice of importing out of state trash wasn't responsible for NCES Bethlehem filling up so quickly, a full year ahead of permitted allowance under the Stage V expansion permit. So, yes, welcome to my life...and welcome to the party.
Like · Share · 1y · 6

Andrea Bryant
Trevor Mallow even if you don't agree with the concern about spilled leachate there is absolutely no need for profanity...
Like · Share · 1y

Save Forest Lake
Operating at 3am in violation of permitted hours of operation illustrates a disregard for rules and regulations by this company, putting its workers at risk as well as the environment now. This is a bad company with a long history of violations. We do not want them in Dalton.
Like · Share · 1y · 3

Michelle Casey
Jon Swan you are wrong.. and there was no violation there. The landfill was not taking in trash at 3 am.
Like · Share · 1y

Save Forest Lake
Guess we'll see what VT DEC comes up with relative to hours of operation. Facts remain that workers were hurt and leachate went into the Black River at 3am. This is not a good company, a poor safety and performance record. We have certainly made sure NH DES is aware of this accident.
Like · Share · 1y

Michelle Casey
And again you think wrong Jon. The leachate trucks Do not fall under the permit for operating hours.
Like · Share · 1y

Save Forest Lake
Ok, guess we'll see. 😉 Happy New Year!
Like · Share · 1y

Andrea Bryant
It is unfortunate that there was an accident for a number of reasons. First I'd like to say that I think it is sad that some people automatically jumped on and even used profanity towards those individuals who expressed concerned about the spill saying that they don't care about the drivers. I'm sure there is no one on this page that don't care about the drivers. However, in my opinion those attacks are just deflecting from the fact that a leachate spill is a terrible situation and a source of toxic contamination. Leachate contains many poisons and it is the leachate that is a major reason I am concerned that the NCES landfill is sited on top of an aquifer and already has a drainage channel flowing into the Ammonoosuc River. Whose responsibility it is doesn't matter to me, it happened and that is really tragic.
https://www.sciencedirect.com/.../earth.../landfill-leachate
SCIENCEDIRECT.COM
Landfill Leachate - an overview | ScienceDirect Topics
Like · Share · 1y · 6

Julie Niebruegge Seely
Well said, Andrea.
Like · Share · 1y · 4

Nancy Dickowski
Where was the truck loaded with leachate going?
Like · Share · 1y · 1

Save Forest Lake
Most likely Montpelier
Like · Share · 1y

Michelle Casey
The treatment plant is in newport.
Like · Share · 1y

Save Forest Lake
https://www.clf.org/.../toxic-landfill-leachate-drinking.../
CLF.ORG
Is Toxic Landfill Wastewater Coming to a Stream or Farm...
Like · Share · 1y

Save Forest Lake
NEWPORT CITY — The city council voted unanimously Monday to stop accepting leachate from the landfill in Coventry to be treated at the city's wastewater plant.

The decision to stop treating 15,000 gallons a day of leachate, the liquid that drains from within the liners of the state's only landfill, will remain in effect until it's determined to be safe, according to the council.
https://www.caledonianrecord.com/.../article_47e069bc...
CALEDONIANRECORD.COM
Newport City Council Refuses To Treat Landfill Leachate
Like · Share · 1y · 1

Nancy Dickowski
The article is dated 10/18/2018. Leachate now "safe" to treat? What makes it so? Not a good call to transport it when road conditions were questionable.
Like · Share · 1y

Save Forest Lake
Nancy Dickowski Agree 100% and part of the not safe to treat has to do with the removal of PFAS aka forever chemicals...you should check out New Hampshire Safe Water Alliance as Mindi Messmer has been leading the way on that front, all of which are related...landfills, PFAS, single-use plastics, clean water. Here's some light reading:
https://www.wastedive.com/.../pfas-forever.../569209/...
WASTEDIVE.COM
Developing stories on PFAS, the 'forever chemicals' looming...
Like · Share · 1y

Nancy Dickowski
. . . "removal of PFAS aka forever chemicals. . . " Assuming this treatment has occurred - where are these PFAS stored? There's a post on my FB page that speaks to where I'm at with all this leachate talk: "When you learn a little, you feel you know a lot, but when you learn a lot, you realize you know very little."
Like · Share · 1y · 2

Save Forest Lake
Nancy Dickowski Believe me, this has been like one giant rabbit hole...the world of trash and what has been allowed to go on under our noses as we are distracted by life and American Idol. But, people are waking up...we fight for the future generations so they have a better world than if we did nothing and allowed these profiteers to do what they want, the future be damned. **#SaveForestLake**
Like · Share · 1y · 3

Jason Doyle
There was a tanker accident in Epping last week dumping 5,000 gallons of gasoline into the ground... I didn't see a post telling us we should shut down Irving? Accidents happen, and they are unfortunate and need to be dealt with properly, but they are by definition accidents... at times these posts seems like a witch hunt looking for something to smear a business operating in our community... I didn't see any announcement listed here when Casella won an award for recycling? I understand that some in our community want to shut down the land fill, some want to see it continue and others still don't really have an opinion.... that's the lovely thing about this country, we can all freely express our opinion. However, if this is truly a community page, lets focus on the great things happening in our community and forward progress... just my 2 cents...
Like · Share · 1y · 10

Save Forest Lake
COVENTRY — A criminal investigation is ongoing into a Coventry accident early Friday morning that breached a tanker truck, spilled leachate from the nearby landfill and left one man injured.

Details were not available Sunday about how much leachate, the liquid drained from within the liners of the state's only operating landfill, spilled from the truck's cracked tank on Route 5 or whether any reached the Black River. The leachate is trucked to waste water treatment plants outside the Lake Memphremagog watershed for treatment.
https://www.caledonianrecord.com/.../article_008dd840...
CALEDONIANRECORD.COM
Friday Truck Accident Caused Leachate Spill In Coventry
Like · Share · 1y · Edited

Gary Ghioto
That's going to create a huge algae bloom in the spring.
Like · Share · 1y

Save Forest Lake
Thank goodness, talk about a close call and alot of nasty stuff! Now, let's see what kind of violations DEC comes up with. COVENTRY — An estimated 8,000 gallons of leachate from the landfill in Coventry spilled from a breached tanker truck early Friday morning in an accident that left one man seriously injured.

The leachate, liquid that is drained from within the liners of the landfill on Airport Road, contaminated soils around Route 5 where the accident occurred but did not reach the nearby Black River, said Shawn Donovan, spill manager for the Vermont Department of Environmental Conservation.
https://www.caledonianrecord.com/.../article_011cedaa...
CALEDONIANRECORD.COM
Leachate Spill Did Not Reach Black River, DEC Official Says
Like · Share · 1y

Save Forest Lake
Thought this last blurb from Casella-spokesman Fusco was pretty funny, and obviously quite telling about just how forthcoming this company is relative to the truth: "Fusco said that because the trucks weren't Casella's, he had little information about the spills." Yeah, right, Joe...it's your operation. If you don't have any information about the spills, from your own operation, then why on earth would we want you to operate a facility at Forest Lake when it's obvious you don't have full control over your own in Coventry? So many violations/incidents over the past months, both at Bethlehem and Coventry, seem to be very bad at their job as environmental stewards...
https://vtdigger.org/.../coventry-tanker-crash-causes.../...
VTDIGGER.ORG
Coventry tanker crash causes landfill contaminant spill, injures 1
Like · Share · 1y · 1

Andrea Bryant
Hum... in a building project the head contractor is definitely aware of their subcontractors... I wonder if pumping out leachate at 3am (in the middle of the night) is practiced here in Bethlehem...
Like · Share · 1y

Save Forest Lake
Makes you wonder, huh?
Like · Share · 1y

Save Forest Lake
https://www.caledonianrecord.com/.../article_4ed0121f...
CALEDONIANRECORD.COM
Leachate Truck Accident - Jon Swan
Like · Share · 1y

Save Forest Lake
If anyone has contacts within the VT State Police, we'd like to obtain a photo of the 2 MBI trucks from the scene of the accident. Thank you.
Like · Share · 1y · 1

Mark Koprowski
It was suggested that the Dalton land be purchased by a conservation group. Has anyone approached the Society for the Protection on NH's Forests about this?
Like · Share · 1y

Save Forest Lake
Hi Mark: Yes, have met with Will from the SPNHF and others, ACT, etc. and certainly something to consider...especially once Casella realizes they won't be able to get a permit there.
Like · Share · 1y

Save Forest Lake
BTW, about the injured driver, Jean Paul Lamourex, he has a broken back ribs pelvis and also had a concussion but he is doing well considering his conditions, per my sources. Thank God.
Like · Share · 1y

https://www.caledonianrecord.com/news/local/leachate-spill-did-not-reach-black-river-dec-official-says/article_011cedaa-9714-5a37-b5b4-bd5845532fa8.html

Leachate Spill Did Not Reach Black River, DEC Official Says

Breached Tanker Lost 8,000 Gallon Load Near Black River

Robin Smith
Dec 31, 2019

COVENTRY — An estimated 8,000 gallons of leachate from the landfill in Coventry spilled from a breached tanker truck early Friday morning in an accident that left one man seriously injured.

The leachate, liquid that is drained from within the liners of the landfill on Airport Road, contaminated soils around Route 5 where the accident occurred but did not reach the nearby Black River, said Shawn Donovan, spill manager for the Vermont Department of Environmental Conservation.

“Our observation was that it did not reach the river,” Donovan said.

The accident involving two truck units occurred early Friday morning during an ice storm.

Jean Paul Lamoureux, 64, of Newport City was taken to Dartmouth Hitchcock Medical Center in Lebanon, N.H., where he was reported in stable condition as of Saturday, according to a hospital spokeswoman.

Donovan said Monday that the company hired by the state was still doing clean up, removing contaminated soils from the accident scene.

The soils would be taken back to the landfill, Donovan said.

There was a very small amount of leachate still in the breached tanker, he said.

Soil samples around the spill site would be collected and tested. There was also spill of oils and diesel fuel from the damaged truck.

The state will do a study of the soil samples to determine if more cleanup work is necessary, depending on what kind of chemicals are present.

John Gay, engineer for Casella which owns the landfill, said in a voice mail message that the leachate is not toxic.

Donovan said he and the team observed several well heads in the area but did not see any spilled material near them.

He said that anyone with concerns about their well water should contact the Vermont Department of Health or his waste management and prevention division at DEC.

The accident is the subject of a Vermont State Police investigation.

Lt. Walt Smith, head of the Derby state police barracks, said Monday morning he did not have all the details to comment on the nature of the investigation at that time.

The tractor trailer with the leachate load left the landfill on Airport Road and was southbound on Route 5 when it struck another truck hauling an empty garbage trailer that had slid on icy roads into Route 5 at about 3 a.m. Friday, state police said.

Both vehicles were MBI trucks, a company that handles garbage across the country. Gay said Casella does not own or operate the trucks involved, Gay said.

The driver of the garbage truck was outside his truck, putting out warning signs, and was hit when the tanker truck hit his disabled tractor trailer unit.

The leachate truck driver was not injured.

The accident closed Route 5 and the access to Route 14, the local truck route around Newport City, until mid-day Friday when the road opened for one lane. The road opened fully by mid-afternoon.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW HAMPSHIRE

TOXICS ACTION CENTER, INC., and CONSERVATION LAW FOUNDATION, Plaintiffs, v. CASELLA WASTE SYSTEMS, INC., and NORTH COUNTRY ENVIRONMENTAL SERVICES, INC., Defendants.	Civil Action No.: 18-cv-393 **FIRST AMENDED COMPLAINT**

INTRODUCTION

1. Defendants discharge pollutants—including, but not limited to, contaminated groundwater, landfill leachate, iron, manganese, and 1,4-dioxane—to a 370-foot-long drainage channel ("Drainage Channel") located near the North Country Environmental Services landfill ("Landfill") in Bethlehem, New Hampshire, and then from the Drainage Channel into the Ammonoosuc River. These discharges have violated, are violating, and will continue to violate the federal Clean Water Act ("CWA").

2. Plaintiffs Toxics Action Center, Inc. ("Toxics Action") and Conservation Law Foundation ("CLF") have members who live near, swim in, and otherwise use or would like to use the Ammonoosuc River, and whose use and enjoyment of the river has been and continues to be adversely affected by the Defendants' illegal discharge of pollutants.

3. Plaintiffs bring this citizen enforcement action under the "citizen suit" provision of the CWA, 33 U.S.C. § 1365, to end these longstanding, ongoing violations.

JURISDICTION AND VENUE

4. This Court has subject matter jurisdiction over this action pursuant to 33 U.S.C. § 1365(a)(1) and 28 U.S.C. § 1331.

5. Venue lies in this District under 33 U.S.C. § 1365(c)(1), because the Landfill and Drainage Channel are located within the District.

6. Pursuant to 33 U.S.C. § 1365(b), Plaintiffs gave notice of the violations alleged in Count I of this First Amended Complaint more than 60 days prior to the commencement of this lawsuit by a letter ("Notice Letter") mailed via U.S. mail to: (a) the Defendants; (b) the United States Environmental Protection Agency ("EPA"); and (c) the New Hampshire Department of Environmental Services. Pursuant to 33 U.S.C. § 1365(b), Plaintiffs gave notice of the violations alleged in Count II of this First Amended Complaint more than 60 days prior to the amendment that added Count II to this lawsuit by a letter ("Second Notice Letter") mailed via U.S. mail to: (a) the Defendants; (b) the United States Environmental Protection Agency ("EPA"); and (c) the New Hampshire Department of Environmental Services.

7. A copy of the Notice Letter is attached as Exhibit 1 to this First Amended Complaint and is incorporated by reference herein. A copy of the Second Notice Letter is attached as Exhibit 4 to this First Amended Complaint and is incorporated by reference herein.

8. Each of the parties listed above received the Notice Letter. Copies of return receipts and United States Postal Service tracking information are attached as Exhibit 2 to this Complaint. Each of the parties listed above received the Second Notice Letter. Copies of return receipts are attached as Exhibit 5 to this Complaint.

9. The Notice Letter and Second Notice Letter each satisfy the pre-suit notice requirements of 33 U.S.C. § 1365(b)(1)(A).

10. Subsequent to Defendants' receipt of the Notice Letter, Defendants' counsel wrote a letter to Plaintiffs' counsel asking that communications with Defendants be directed to Defendants' counsel, but otherwise did not communicate with Plaintiffs or their counsel about the Notice Letter.

11. Neither EPA nor the State of New Hampshire has contacted Plaintiffs or Plaintiffs' counsel about the Notice Letter or the Second Notice Letter.

12. Neither EPA nor the State of New Hampshire has commenced or is diligently prosecuting a civil or criminal action against Defendants to address any of the violations at issue in this case. Neither EPA nor the State of New Hampshire has commenced, and neither is diligently prosecuting, any administrative penalty action against Defendants with regard to any of the violations at issue in this case.

PARTIES

13. Plaintiff Toxics Action is a non-profit corporation organized under the laws of Massachusetts. Toxics Action has approximately 1,900 members. Toxics Action works with citizens across New England in an effort to reduce, clean up, and remediate the effects of pollution in their communities.

14. Toxics Action has members who live and own property near the Ammonoosuc River, who use the river for recreational and aesthetic purposes, and who are adversely affected by the Defendants' illegal pollutant discharges to the Ammonoosuc River.

15. Plaintiff CLF is a non-profit corporation duly organized under the laws of Massachusetts with approximately 5,100 members, including approximately 550 members in New Hampshire. CLF works to protect New England's environment for the benefit of all

people. CLF uses the law, science, and the market in an effort to create solutions that preserve natural resources, build healthy communities, and sustain a vibrant economy.

16. CLF has members who live and own property near the Ammonoosuc River, who use the river for recreational and aesthetic purposes, and who are adversely affected by the Defendants' illegal pollutant discharges to the Ammonoosuc River.

17. Defendant North Country Environmental Services, Inc. ("NCES"), is a for-profit corporation organized under the laws of New Hampshire. NCES is a wholly owned subsidiary of New England Waste Services, Inc., which is itself a wholly owned subsidiary of Defendant Casella Waste Systems, Inc. NCES is the owner, and an operator, of the Landfill.

18. NCES plays a direct role in managing and funding the Landfill's operations and pollution control activities. Its operational role includes, but is not limited to, the management and disposal of solid waste, groundwater well installation and monitoring, surface water monitoring, maintenance and operation of leachate collection systems, maintenance and operation of the Drainage Channel, and provision of services incidental to pollution control.

19. Defendant Casella Waste Systems, Inc. ("Casella") is a publicly traded for-profit corporation organized under the laws of Delaware and headquartered in Rutland, Vermont. It is registered to do business in New Hampshire. Casella is an operator of the Landfill.

20. Casella plays a direct role in managing and funding the Landfill's operations and pollution control activities, including the maintenance and operation of the Drainage Channel. Casella personnel regularly communicate with staff at the New Hampshire Department of Environmental Services ("NHDES") regarding pollution control—including groundwater and surface water monitoring—at the Landfill. Casella personnel also work with third-party

contractors and consultants to prepare Water Quality Monitoring Results and other documents related to the Landfill that are submitted to NHDES on behalf of NCES.

CITIZEN ENFORCEMENT SUITS UNDER THE CLEAN WATER ACT

21. The objective of the CWA "is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a).

22. The CWA prohibits the addition of any pollutant to navigable waters from any point source except as authorized by a National Pollutant Discharge Elimination System ("NPDES") permit applicable to that point source. 33 U.S.C. §§ 1311(a), 1342, 1362(12).

23. The CWA authorizes citizens to commence an enforcement action against any person who violates "an effluent standard or limitation" of the CWA. One such effluent standard or limitation is the requirement to obtain NPDES permit authorization before adding a pollutant to navigable waters from a point source. 33 U.S.C. §§ 1365(a), (f).

24. The CWA grants jurisdiction to United States District Courts to enforce effluent standards or limitations, to issue injunctions, to impose appropriate civil penalties for violations, and to award costs of litigation to citizen plaintiffs. 33 U.S.C. §§ 1365(a), (d).

FACTUAL BACKGROUND

The Landfill

25. The Landfill comprises approximately 46.5 acres of waste disposal space divided among five stages (numbered I–V), each of which incorporates synthetic liners and a leachate collection system.

26. The Landfill is located approximately 800 feet south of the Ammonoosuc River.

27. Beginning in the 1970s, Harold Brown owned and operated an unlined landfill ("Unlined Waste Disposal Space") at the site of what is now Stage II of the Landfill.

28. In 1985, Sanco, Inc. ("Sanco") purchased the Unlined Waste Disposal Space from Brown, along with 41 undeveloped abutting acres.

29. Beginning in 1987, Sanco constructed and/or directed the construction of Stage I of the Landfill.

30. In 1989, NCES purchased Stage I, the Unlined Waste Disposal Space, and the undeveloped abutting acreage from Sanco.

31. NCES subsequently excavated the Unlined Waste Disposal Space and placed the excavated material in Stage I of the Landfill.

32. NCES constructed and/or directed the construction of Landfill Stages II–V. NCES and/or its consultants constructed Stage II of the Landfill in the excavated site formerly occupied by the Unlined Waste Disposal Space. Stages III through V are located next to and above Stages I and II.

The Drainage Channel

33. The Landfill lies within the Ammonoosuc River watershed.

34. Groundwater underneath and near the Landfill flows to the northeast, towards the Ammonoosuc River. Preferential groundwater flow patterns lead from the Landfill to a network of groundwater seeps on a steep slope south of the Ammonoosuc River.

35. Casella, NCES, and their consultants refer to the one seep exhibiting the greatest discharge flow among the network of groundwater seeps as the "Main Seep."

36. The Main Seep is connected to the Ammonoosuc River by the Drainage Channel. The Drainage Channel is approximately 370 feet long.

37. The Main Seep and the Drainage Channel are located on property owned by NCES.

38. The Drainage Channel collects water that emerges from the Main Seep, and from other nearby seeps and wetlands, and conveys that water to the Ammonoosuc River.

39. The Drainage Channel also collects pollutants—including, but not limited to, contaminated groundwater, landfill leachate, iron, manganese, and 1,4-dioxane—that emerge from the Main Seep and then conveys those pollutants to the Ammonoosuc River. Leachate is liquid that has passed through or emerged from solid waste and that contains soluble, suspended, or miscible materials removed from such waste.

40. The Drainage Channel also collects pollutants—including, but not limited to, contaminated groundwater, landfill leachate, iron, manganese, and 1,4-dioxane—that emerge from other groundwater seeps and wetlands connected to the Drainage Channel and then conveys those pollutants to the Ammonoosuc River.

41. NCES and Casella personnel, and/or consultants acting on behalf of NCES and Casella, manage and monitor pollutant discharges from the Drainage Channel to the Ammonoosuc River. See infra Paragraphs 48–49, 56–62.

42. In 2010, consultants for Casella and/or NCES excavated approximately 176 tons of sediment containing elevated levels of iron, manganese, and arsenic from the Main Seep and the Drainage Channel as part of a Seep Restoration Project.

43. After excavating the discolored soil, consultants for Casella and/or NCES reconstructed the Drainage Channel.

44. The reconstructed Drainage Channel was designed to convey water—and any pollutants dissolved, suspended, or otherwise mixed in that water—from the Main Seep, and from other nearby seeps and wetlands, to the Ammonoosuc River.

Groundwater Permit and Water Quality Monitoring

45. The Landfill is registered under New Hampshire Groundwater Management and Release Detection Permit No. GWP-198704033-B-006 ("Groundwater Permit").

46. The Groundwater Permit requires NCES to collect and test separate groundwater samples from monitoring wells near the Landfill, some of which are located in a Groundwater Monitoring Zone ("GMZ") located between the Landfill and the Ammonoosuc River.

47. The Groundwater Permit also requires NCES to collect and test separate surface water samples from the Main Seep, from three other surface seeps in the GMZ, from the Drainage Channel, and from three locations in the Ammonoosuc River.

48. NCES, through its consultant, Sanborn, Head, and Associates, Inc. ("Sanborn Head"), submits "Water Quality Monitoring Results" to NHDES three times per year. The Water Quality Monitoring Results include test results from the required groundwater monitoring and surface water monitoring.

49. Sanborn Head coordinates the preparation and submission of Water Quality Results with both NCES and Casella personnel.

50. A copy of an Exploration Location Plan attached to the November 2017 Water Quality Monitoring Results submitted to NHDES is attached as Exhibit 3 to this Complaint and is incorporated by reference herein. Exhibit 3 depicts the aforementioned monitoring wells, surface water monitoring locations, and GMZ, and also depicts the Landfill, its component stages, and the nearby Ammonoosuc River.

51. The Water Quality Monitoring Results submitted to NHDES compare sample testing results to Ambient Groundwater Quality Standards ("AGQS") set by NHDES, and/or to Secondary Maximum Contaminant Levels ("SMCL") set by EPA, where applicable.

52. The SMCL for iron is 0.3 mg/L.

53. The SMCL for manganese is 0.05 mg/L.

54. The AGQS for manganese is 0.84 mg/L.

Pollutant Discharges from the Drainage Channel to the Ammonoosuc River

55. Water Quality Monitoring Results submitted to NHDES indicate that the Drainage Channel is discharging pollutants to the Ammonoosuc River.

56. In the November 2017 Water Quality Monitoring Results, NCES reported the following information regarding iron and manganese concentrations in samples collected from the Main Seep (location S-1):

Complaint Paragraph Number	Sample Date	Iron Concentration (mg/L)	Manganese Concentration (mg/L)
56a	11/6/12	0.54	0.18
56b	4/10/13	4.5	0.65
56c	7/9/13	1.0	0.18
56d	11/5/13	2.4	0.50
56e	4/21/14	0.25	0.12
56f	7/17/14	0.09	0.06
56g	11/5/14	1.1	0.21
56h	4/15/15	0.75	0.15
56i	7/21/15	0.12	0.038
56j	11/10/15	0.77	0.14
56k	4/11/16	0.87	0.097
56l	7/12/16	0.12	0.053
56m	11/7/16	0.16	0.044
56n	4/3/17	0.38	0.075
56o	7/26/17	0.32	0.077

57. In the November 2017 Water Quality Monitoring Results, NCES reported the following information regarding iron and manganese concentrations in samples collected from the Drainage Channel (location SF-1):

Complaint Paragraph Number	Sample Date	Iron Concentration (mg/L)	Manganese Concentration (mg/L)
57a	11/6/12	1.8	0.34
57b	4/10/13	3.8	0.50
57c	7/9/13	1.1	0.27
57d	11/5/13	1.6	0.37
57e	4/21/14	3.9	0.45
57f	7/17/14	2.1	0.41
57g	11/5/14	2.1	0.28
57h	4/15/15	2.2	0.35
57i	7/21/15	1.9	0.32
57j	11/10/15	1.6	0.33
57k	4/11/16	5.9	0.35
57l	7/12/16	1.4	0.32
57m	11/7/16	1.1	0.27
57n	12/1/16	2.9	0.31
57o	4/3/17	3.2	0.50
57p	7/26/17	1.5	0.37
57q	11/6/17	1.3	0.31

58. In the November 2017 Water Quality Monitoring Results, NCES reported the following information regarding the concentrations of 1,4-dioxane in samples collected from the Drainage Channel (location SF-1):

Complaint Paragraph Number	Sample Date	1,4-Dioxane Concentration (µg/L)
58a	11/7/16	0.31

58b	12/1/16	0.26
58c	4/3/17	0.28

59. The testing data listed in Paragraphs 57–58 indicate that the Drainage Channel is discharging iron, manganese, and 1,4-dioxane to the Ammonoosuc River.

60. Testing data for samples collected from the Ammonoosuc River itself further indicate that the Drainage Channel is discharging these pollutants to the Ammonoosuc River.

61. In the November 2017 Water Quality Monitoring Results, NCES reported the following information regarding iron and manganese concentrations in samples collected from the Ammonoosuc River *upstream* from the Drainage Channel (location AR-1):

Complaint Paragraph Number	**Sample Date**	**Iron Concentration (mg/L)**	**Manganese Concentration (mg/L)**
61a	7/9/13	0.22	0.018
61b	7/17/14	0.19	0.017
61c	7/21/15	0.18	0.015
61d	7/12/16	0.10	0.016
61e	4/3/17	0.10	0.018
61f	7/26/17	0.18	0.017

62. In the November 2017 Water Quality Monitoring Results, NCES reported the following information regarding iron and manganese concentrations in samples collected from the Ammonoosuc River *downstream* from the Drainage Channel (location AR-2):

Complaint Paragraph Number	**Sample Date**	**Iron Concentration (mg/L)**	**Manganese Concentration (mg/L)**
62a	7/9/13	0.24	0.021
62b	7/17/14	0.43	0.031
62c	7/21/15	0.25	0.030
62d	7/12/16	0.17	0.029

62e	4/3/17	0.20	0.037
62f	7/26/17	0.23	0.029

63. On each of the dates listed in Paragraphs 61 and 62, iron and manganese concentrations downstream from the Drainage Channel were higher than those upstream from the Drainage Channel.

64. The presence of iron, manganese, and 1,4-dioxane in the Drainage Channel is attributable to, and indicative of, the presence of landfill leachate and/or contaminated groundwater from the Landfill and/or the Unlined Waste Disposal Space.

65. Iron, manganese, and 1,4-dioxane are commonly found in landfill leachate, and in groundwater contaminated by landfill waste and/or by activities associated with waste disposal.

66. 1,4-dioxane is a synthetic industrial chemical; it is not naturally occurring.

67. Consultants for Casella and/or NCES have concluded that the presence of iron and manganese in the Drainage Channel is the result of groundwater contamination from the Unlined Waste Disposal Space.

68. Water Quality Monitoring Results indicate that leachate, contaminated groundwater, and other pollutants attributable to the Landfill are also present in the Drainage Channel.

69. Water Quality Monitoring Results indicate that groundwater monitoring wells between the Landfill and the Ammonoosuc River regularly contain iron and manganese concentrations that exceed the applicable AGQS and/or SMCL. These monitoring wells draw groundwater from the flow pattern that leads from the Landfill to the Drainage Channel. See Paragraph 34; Exhibit 3.

70. Water Quality Monitoring Results indicate the presence of 1,4-dioxane in groundwater monitoring wells between the Landfill and the Ammonoosuc River. These monitoring wells draw groundwater from the flow pattern that leads from the Landfill to the Drainage Channel. See Paragraph 34; Exhibit 3.

71. The presence of 1,4-dioxane and elevated concentrations of iron and manganese in groundwater that flows from the Landfill to the Drainage Channel demonstrate that the Landfill is a source of the 1,4-dioxane, iron, and manganese in the Drainage Channel.

72. Average iron and manganese concentrations in samples collected from some groundwater monitoring wells in the GMZ have increased from 2008 to present. Other groundwater monitoring wells in the GMZ have contained consistent levels of iron and manganese from 2008 to present.

73. The stable and/or increasing iron and manganese concentrations in these monitoring wells demonstrate that the presence of these metals in groundwater linking the Landfill to the Drainage Channel is attributable, at least in part, to the Landfill. If iron and manganese concentrations were attributable solely to soil contamination from the Unlined Waste Disposal Space, the concentrations would be expected to exhibit a decreasing—rather than stable or increasing—trend from 2008 to the present, as the residual effects of the Unlined Waste Disposal Space diminish over time.

74. Between 1996 and 2006, NCES applied sodium bromide to waste added to Stages II and III of the Landfill. NCES intended the sodium bromide to function as a manner of leak detection—if bromide is detected in groundwater near the Landfill, it is an indication that Landfill cells are leaking.

75. Following these applications of sodium bromide, bromide has been regularly detected in samples collected from monitoring wells that draw groundwater from the flow pattern that leads from the Landfill to the Drainage Channel. The presence of bromide in these samples is an indication that the Landfill is releasing leachate and other pollutants to groundwater that is thereafter collected and discharged to the Ammonoosuc River by the Drainage Channel.

ADVERSE EFFECTS OF POLLUTANTS DISCHARGED FROM THE DRAINAGE CHANNEL

76. When iron is present in water at concentrations above the SMCL, it can result in a rusty hue, a reddish-colored sediment, and a metallic taste.

77. Iron can form solid precipitates in water that can settle on the gills and eggs of aquatic organisms and obstruct oxygen uptake and negatively affect reproduction and mobility.

78. Dissolved iron can be absorbed through the gills and stomachs of aquatic organisms and can bioaccumulate to levels that interfere with cellular processes.

79. Exposure to elevated levels of manganese can damage the gills, intestinal mucosa, and kidneys of fish.

80. 1,4-dioxane is a likely human carcinogen. EPA has classified 1,4-dioxane as likely to be carcinogenic by all routes of exposure.

81. 1,4-dioxane is highly mobile in water and does not readily biodegrade in the environment.

82. Because leachate contains pollutants removed from solid waste, it can present a diverse and variable array of environmental risks depending on its constituents. The nature of these constituents, and thus the degree of risk, can change over time. To Plaintiffs' knowledge,

the constituents of the leachate discharged to the river via the Drainage Channel are not being regularly and comprehensively characterized.

83. Groundwater contaminated by landfilling activity can also present a diverse and variable array of environmental risks depending on its constituents. The nature of these constituents, and thus the degree of risk, can change over time. To Plaintiffs' knowledge, the constituents of the contaminated groundwater discharged to the river via the Drainage Channel are not being regularly and comprehensively characterized.

VIOLATIONS OF THE CLEAN WATER ACT

COUNT I: THE DRAINAGE CHANNEL IS A POINT SOURCE THAT IS DISCHARGING POLLUTANTS WITHOUT AN NPDES PERMIT

84. Defendants have violated and continue to violate the CWA because they have discharged and continue to discharge pollutants—including, but not limited to, landfill leachate, contaminated groundwater, iron, manganese, and 1,4-dioxane—to the Ammonoosuc River without NPDES permit authorization.

85. Defendants' past and ongoing discharges of pollutants from the Drainage Channel to the Ammonoosuc River violate the CWA, 33 U.S.C. §§ 1311 and 1342, because: (a) the Drainage Channel is a "point source" within the meaning of the CWA; (b) the Ammonoosuc River is a "navigable water" within the meaning of the CWA; (c) the Drainage Channel is adding substances to the Ammonoosuc River that are "pollutants" within the meaning of the CWA; and (d) Defendants are not authorized by any NPDES permit to discharge pollutants from the Drainage Channel to the Ammonoosuc River.

A. The Drainage Channel is a Point Source.

86. The CWA defines point source as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete

fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14).

87. The Drainage Channel is a confined and discrete channel, or conduit, from which groundwater that emerges from the Main Seep, and from other groundwater seeps and wetlands, is discharged to the Ammonoosuc River.

88. As discussed above in Paragraphs 55–75, water discharged from the Drainage Channel to the Ammonoosuc River contains leachate, contaminated groundwater, iron, manganese, and 1,4-dioxane.

89. Leachate, contaminated groundwater, iron, manganese, and 1,4-dioxane are pollutants within the meaning of the CWA. See infra Paragraphs 96–97.

90. The Drainage Channel thus is a confined and discrete conduit from which pollutants may be, and are, discharged to the Ammonoosuc River, and is therefore a point source within the meaning of the CWA.

B. The Ammonoosuc River is a Navigable Water.

91. The CWA defines navigable waters as "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). "Waters of the United States" are defined by EPA regulations to include, *inter alia*, all tributaries to interstate waters. See 40 C.F.R. § 122.2.

92. The Ammonoosuc River is a permanent flowing body of water that empties into the Connecticut River. The Connecticut River is an interstate waterway. It serves as a border between New Hampshire and Vermont, flows south into Massachusetts and Connecticut, and empties into Long Island Sound.

93. The Ammonoosuc River thus is a navigable water within the meaning of the CWA.

C. The Drainage Channel is Adding Pollutants to the Ammonoosuc River.

94. The CWA defines "pollutant" as including, *inter alia*, "solid waste, . . . chemical wastes, . . . and industrial [and] municipal waste." 33 U.S.C. § 1362(6).

95. The Drainage Channel is adding iron, manganese, 1,4-dioxane, contaminated groundwater, and leachate to the Ammonoosuc River. Each of these substances is a pollutant within the meaning of the CWA.

96. The iron, manganese, and 1,4-dioxane discharged via the Drainage Channel are solid and chemical waste, because they are discarded to the river as waste by Defendants, and they are solid, chemical, and industrial and/or municipal waste because they originate from and/or are attributable to industrial waste, municipal waste, and/or activities associated with waste disposal.

97. The contaminated groundwater and leachate discharged via the Drainage Channel are solid and chemical waste because they are discarded to the river as waste by Defendants, and because they contain chemicals that are discarded to the river as waste by the Defendants. They are also solid, chemical, and industrial and/or municipal waste because they are attributable to, originate from, and/or contain chemicals that originate from industrial waste, municipal waste, and/or activities associated with waste disposal.

D. Defendants Are Not Authorized to Discharge Pollutants From the Drainage Channel to the Ammonoosuc River.

98. No NPDES permit authorizes the discharge of pollutants from the Drainage Channel to the Ammonoosuc River.

99. The Landfill is registered under the 2015 NPDES Multi-Sector General Permit ("MSGP").

100. The MSGP does not authorize the discharge of pollutants from the Drainage Channel to the Ammonoosuc River.

101. Section 8.L.3.1 of the MSGP, concerning sector-specific requirements for "Landfills, Land Application Site, and Open Dumps," states that the MSGP does not authorize discharges of leachate, drained free liquids, or contaminated groundwater.

102. The New Hampshire Groundwater Permit does not authorize the discharge of pollutants from the Drainage Channel to the Ammonoosuc River.

E. Defendants' Unauthorized Discharges Are Ongoing and Continuous.

103. Defendants have conveyed pollutants—including, but not limited to, landfill leachate, contaminated groundwater, iron, manganese, and 1,4-dioxane—to the Ammonoosuc River via the Drainage Channel each day from March 8, 2013, (the start of the applicable statute of limitations under the CWA) through the present, and they will continue to discharge these pollutants each day unless or until action is taken to stop the discharge.

104. The Water Quality Monitoring Results and other monitoring conducted by Defendants and/or their consultants generally indicate that the flow of contaminated groundwater from the Main Seep to the Discharge Channel is continuous, and they do not indicate any interruption in this flow. Defendants and/or their consultants have estimated this flow as being approximately 100 gallons per minute, which translates to 144,000 gallons per day.

105. Each day of discharge of each pollutant from the Drainage Channel to the Ammonoosuc River without NPDES permit authorization constitutes a separate and distinct day of violation of the CWA.

COUNT II: THE LANDFILL IS A POINT SOURCE THAT IS DISCHARGING POLLUTANTS WITHOUT AN NPDES PERMIT

106. Plaintiffs assert Count II in the alternative, because Defendants take the position that the Drainage Channel is a "water of the United States" and not a point source. If the Court were to agree with Defendants on that issue, recent U.S. Supreme Court jurisprudence makes clear that Defendants would still be in violation of the CWA for discharging pollutants without a NPDES permit, as set forth below.

107. The Landfill adds pollutants, through groundwater, to the Drainage Channel and thus to the Ammonoosuc River in a manner that is the functional equivalent of a direct discharge from a point source (the Landfill) into navigable waters (the Drainage Channel and the Ammonoosuc River). Defendants have not obtained a NPDES permit authorizing this discharge and are therefore violating the CWA, 33 U.S.C. §§ 1311 and 1342.

A. Factual Background for Count II

108. Preferential groundwater flow paths lead from the Landfill to groundwater seeps on the steep south slope of the Ammonoosuc River. *See* Paragraphs 33-38, above.

109. The unlined segment of the Landfill (referred to above as the Unlined Waste Disposal Space, a term that Defendants claim is inaccurate) released pollutants directly into the ground beneath it during its approximately 20 years of active operation.

110. The unlined segment of the Landfill released pollutants directly into the ground beneath it during the excavation work occurring from 1991-93 that was intended to remove the wastes contained in the unlined segment.

111. Not all of the wastes contained in the unlined landfill were removed by the 1991-93 excavation work. Any remaining unexcavated portions of the unlined segment of the Landfill, and any wastes once contained in the unlined segment that were released into the

ground and not removed by the excavation work, have continued to release pollutants into the groundwater beneath what is now Stage II of the Landfill.

112. A significant mass of pollutants originating in the unlined segment of the Landfill still remains in the ground beneath the Landfill. These pollutants continue to come into contact with groundwater and to be carried through preferential groundwater flow paths until they are discharged to the Drainage Channel.

113. The Landfill pollutants referenced in the preceding paragraph include, but are not limited to: leachate; metals, such as iron and manganese; volatile organic compounds or "VOCs," such as 1,4-dioxane; nitrate; chlorides; ammonia; per- and polyfluoroalkyl substances or "PFAS"; chemical oxygen demand; and organic matter.

114. Any leaks, spills or other releases of pollutants from, or that are attributable to activity at, the lined segments of the Landfill can also reach the groundwater and the same preferential groundwater flow paths that discharge to the Drainage Channel.

115. The continuing presence in the ground of pollutants released by the Landfill has created an anoxic environment in the ground and groundwater. The anoxic conditions created by the Landfill wastes cause additional amounts of iron and manganese to precipitate or mobilize from the soil by means of chemical "redox" (oxygen-reduction) reactions. The iron and manganese enter the groundwater and the same preferential groundwater flow paths that discharge to the Drainage Channel. These additional amounts of iron and manganese are also Landfill pollutants, as they are released, or mobilized, from the soil and discharged to navigable water because of the existence and operation of the Landfill.

B. The Landfill is a Point Source.

116. The CWA defines "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14).

117. The Landfill was built to contain solid waste. The Landfill is akin to a well that is used to hold wastes. The Landfill is a "container" within the meaning of 33 U.S.C. § 1362(14).

118. The Landfill has contours, boundaries, cells, walls, liners and covers that are mapped, clearly delineated, obvious, and easily discerned. The Landfill is "discernable" within the meaning of 33 U.S.C. § 1362(14).

119. The Landfill is confined to a particular defined area, and its purpose is to accept and confine solid waste within that area. The Landfill is "confined" within the meaning of 33 U.S.C. § 1362(14).

120. The Landfill is separate and distinct from the surrounding terrain that has not been made into a landfill. The Landfill is "discrete" within the meaning of 33 U.S.C § 1362(14).

121. The unlined segment of the Landfill was designed in such a way that it would necessarily convey pollutants directly into the ground and groundwater, because landfills generate leachate and the unlined segment of the Landfill was intentionally constructed without a liner that could collect that leachate. The lined segments of the Landfill are also designed in such a way that they necessarily convey pollutants: they have leachate collection and conveyance systems that, when operated and maintained properly, are designed to collect leachate for transfer and ultimate disposal. The Landfill operates as a "conveyance" within the meaning of 33 U.S.C § 1362(14).

122. The Landfill has released pollutants into the ground and groundwater beneath it. These pollutants have in turn caused additional amounts of iron and manganese to be added from the soil into the groundwater beneath the Landfill. Both types of Landfill pollutants are transported by groundwater to various seeps, including but not limited to the Main Seep, that flow into the Drainage Channel, which in turn flows into the Ammonoosuc River. *See* Paragraphs 109-15, above

123. The CWA defines "pollutant" as including, *inter alia*, "solid waste, . . . chemical wastes, . . . and industrial [and] municipal waste." 33 U.S.C. § 1362(6). All of the substances described in Paragraphs 113 and 115 are pollutants within the meaning of the CWA. They are solid waste and chemical wastes because they are discarded by Defendants. They are industrial and/or municipal wastes because they originate from or are attributable to industrial waste, municipal waste, or activities associated with waste disposal.

124. There are no local sources of the pollutants described in Paragraphs 113 and 115 other than the Landfill. Defendants have not identified any such alternative source.

125. The Landfill is a point source as defined by 33 U.S.C. § 1362(14).

C. <u>The Ammonoosuc River and the Drainage Channel are Navigable Waters.</u>

126. The Ammonoosuc River is a water of the United States and thus a navigable water within the meaning of the CWA. *See* Paragraphs 91-93, above.

127. Defendants have taken the position in this action that the Drainage Channel is a water of the United States, and thus a "navigable water" for the purposes of the CWA because, they maintain, it is a perennial stream and empties into the Ammonoosuc River.

128. For purposes of this Count II, the Drainage Channel is a water of the United States and thus a navigable water within the meaning of the CWA.

D. The Landfill is Adding Pollutants to the Drainage Channel and to the Ammonoosuc River.

129. Landfill pollutants are conveyed from the area beneath the Landfill by well-established preferential groundwater flow paths for a short distance – ranging from hundreds of feet to as much as 2,000 feet – before they emerge from the ground.

130. Monitoring results from groundwater wells located between the Landfill and the Drainage Channel confirm the flow of Landfill pollutants along these flow paths. *See, e.g.*, Paragraphs 69-72.

131. The groundwater containing these pollutants emerges at clearly defined points. Most of the groundwater that runs into the Drainage Channel emerges at the Main Seep, which forms the head of the Drainage Channel. Smaller groundwater flows emerge at smaller identifiable seeps that flow into the Drainage Channel downgradient from the Main Seep. The pollutants in these groundwater flows are discharged as wastes into the Drainage Channel.

132. Although the original release of pollutants from the Landfill into the ground began decades ago, the addition of these pollutants to navigable waters still occurs each day.

133. Water Quality Monitoring Results submitted by Defendant NCES to NHDES indicate that the Main Seep is discharging Landfill pollutants to the Drainage Channel.

134. Paragraph 56, above, sets forth the iron and manganese concentrations in samples collected from the Main Seep (location S-1) from 2012 through 2017. Samples collected from the Main Seep since 2017 show that these discharges into the Drainage Channel are continuing:

Complaint Paragraph Number	Sample Date	Iron Concentration (mg/L)	Manganese Concentration (mg/L)
134a	4/23/18	1.1	0.25
134b	7/10/18	1.9	0.31
13bc	11/5/18	0.32	0.094

134d	4/22/19	0.76	0.22
1343	7/8/19	0.38	0.095
134f	11/5/19	0.41	0.1

135. Water Quality Monitoring Results submitted by Defendant NCES to NHDES indicate that other seeps are likely discharging Landfill pollutants to the Drainage Channel.

136. Paragraphs 57 and 58, above, set forth the iron, manganese, and 1,4-dioxane concentrations in samples collected from a location close to the mouth of the Drainage Channel (location SF-1) from 2012 through 2017. Samples collected from location SF-1 since 2017 show that pollutant discharges into the Drainage Channel are continuing:

Complaint Paragraph Number	**Sample Date**	**Iron Concentration (mg/L)**	**Manganese Concentration (mg/L)**
136a	4/23/18	2.3	0.34
136b	7/10/18	2.5	0.44
136c	11/5/18	1	0.29
136d	4/22/19	1.5	0.31
136e	7/8/19	1.3	0.29
136f	11/5/19	1.7	0.28

137. The testing data listed in Paragraphs 57, 58 and 136 indicate that the Drainage Channel is discharging Landfill pollutants to the Ammonoosuc River.

138. Testing data for samples collected from the Ammonoosuc River itself further indicate that the Drainage Channel is discharging Landfill pollutants to the Ammonoosuc River. These data show that iron and manganese concentrations in the river downstream from the Drainage Channel (location AR-2) are consistently higher than those in the river upstream from the Drainage Channel. *See* Paragraphs 60-64, above, and the following data collected since 2017:

Complaint Paragraph Number	Sample Location	Sample Date	Iron Concentration (mg/L)	Manganese Concentration (mg/L)
138a	AR-1	7/10/18	0.21	0.017
138b	AR-1	7/8/19	0.22	0.019
138c	AR-2	7/10/18	0.23	0.025
138d	AR-2	7/8/19	0.22	0.020

139. The process is a continuous addition of pollutants to groundwater that has resulted in the discharge to the Drainage Channel of significant amounts of the wastes released from the Landfill.

140. The manner of discharge to the Drainage Channel, whereby polluted groundwater converges and then emerges primarily at the Main Seep, creates visually dramatic impacts to the Drainage Channel.

141. Defendants removed 176 tons of contaminated sediments from the Drainage Channel during 2010. The sediments were orange in color. Defendants deposited these sediments into the Landfill.

142. Although some pollutants may be diluted in concentration by groundwater and some may be magnified in concentration by passing through the anoxic soil and groundwater, pollutants identified at monitoring locations S-1 and SF-1 in the Drainage Channel are clearly identifiable as having originated in the Landfill or as having originated from chemical processes created by Landfill wastes.

143. The specific identity of the Landfill pollutants discharged to the Drainage Channel is maintained as they travel through the groundwater from the Landfill (or, in the case of the excess iron and manganese, from the soils beneath the Landfill) to the seeps feeding the Drainage Channel.

144. The Water Quality Monitoring Results listed in Paragraphs 56, 57, 134 and 136, which go back to 2012, consistently show levels of iron and manganese in the Drainage Channel that exceed, often by many times, the applicable surface water quality standards for those pollutants.

145. The transit time for some Landfill pollutants to reach the Main Seep and the Drainage Channel through groundwater has been described by one of Defendants' testifying experts as "pretty quick, a couple of years."

146. Defendants have known for many years that Landfill pollutants discharge into the Drainage Channel. At least as far back as 1995, NHDES required Defendants to monitor for pollutants associated with landfills (including iron, manganese, and VOCs) at monitoring locations S-1, SF-1, AR-1 and AR-2. NHDES ordered Defendants in 2002 to remediate iron and manganese concentrations and deposits at the Main Seep, even though at that time the Main Seep and Drainage Channel were on land Defendants did not own.

147. Because this flow of pollutants into the Drainage Channel is continuous, the addition of Landfill pollutants to the Drainage Channel continues to occur each and every day.

148. Because the flow of pollutants from the Drainage Channel into the Ammonoosuc River is continuous, the addition of Landfill pollutants to the Ammonoosuc River continues to occur each and every day.

149. This continuing daily discharge of Landfill pollutants is the functional equivalent of a continuing direct discharge from the Landfill into the Drainage Channel and the Ammonoosuc River.

E. Defendants Are Not Authorized to Discharge Pollutants From the Landfill to the Drainage Channel or to the Ammonoosuc River.

150. No NPDES permit authorizes the discharge of pollutants from the Landfill to the Drainage Channel or to the Ammonoosuc River. *See* Paragraphs 98-102.

F. Defendants' Unauthorized Discharges Are Ongoing and Continuous.

151. Defendants have conveyed pollutants from the Landfill—including, but not limited to, leachate, contaminated groundwater, iron, manganese, and 1,4-dioxane—to the Drainage Channel, and thus to the Ammonoosuc River, each day from May 15, 2015, (the start of the applicable statute of limitations period under the CWA for Count II) through to the present, and they will continue to do so each day unless or until action is taken to stop the discharge.

152. Each day of discharge of each pollutant from the Landfill to the Drainage Channel, and thus to the Ammonoosuc River, without NPDES permit authorization constitutes a separate and distinct day of violation of the CWA.

PLAINTIFFS AND THEIR MEMBERS ARE HARMED BY THE CWA VIOLATIONS

153. Members of Toxics Action and CLF live near, own property near, work near, and/or visit the Ammonoosuc River and use the river for recreational and aesthetic purposes.

154. Plaintiffs' members consider a clean and vibrant Ammonoosuc River to be an important resource and an aesthetically significant part of the area in which they live, work, visit, and/or recreate.

155. Plaintiffs have members who want the Ammonoosuc River to contain as little pollution as possible, to be free of illegal pollution discharges, and to be afforded the full protections of the Clean Water Act.

156. Plaintiffs have members who used to swim in and otherwise use the Ammonoosuc River downstream from the Drainage Channel, but now limit, or avoid entirely, swimming in or using those areas due to concerns about the human health, aquatic health, and aesthetic impacts of pollutants discharged by the Defendants to the Ammonoosuc.

157. Plaintiffs have members who have observed discoloration and other signs of pollution in and near the Ammonoosuc River (including red, brown, and/or orange discoloration, which can be attributable to iron pollution), which has decreased their enjoyment of the river.

158. Plaintiffs have members who would recreate in or near, or otherwise use and enjoy the area of the river downstream from the Drainage Channel, but who refrain from doing so because they are concerned about the cancer risk from 1,4-dioxane.

159. Plaintiffs have members who are concerned that the Ammonoosuc River has been polluted by Defendants' discharges and that the health of aquatic life has been harmed by this pollution. Their enjoyment derived from activities in and around the Ammonoosuc River is diminished due to these concerns.

160. Plaintiffs have members who spend less time in and around the Ammonoosuc River than they otherwise would because they are concerned about pollutants discharged by Defendants to the Drainage Channel and then into the Ammonoosuc River.

161. Plaintiffs have members who are concerned that the Ammonoosuc River and, by extension, the Drainage Channel have been, and continue to be, deprived of the protections afforded by the Clean Water Act, and who have been deprived of the public process and other avenues for access and comment associated with the Clean Water Act's permitting process.

162. Because Defendants have not applied for, or received, a NPDES permit for pollutant discharges from the Landfill to the Drainage Channel, or from the Drainage Channel to

the Ammonoosuc River, Plaintiffs and their members are deprived of access to the monitoring and reporting that would be required if Defendants were governed by an NPDES permit authorizing their discharge of pollutants to the Drainage Channel and/or to the Ammonoosuc River.

RELIEF REQUESTED

Plaintiffs request that this Court:

a. Declare Defendants to have violated and be in violation of the CWA by discharging pollutants from the Drainage Channel to the Ammonoosuc River without NPDES authorization or, in the alternative, to have violated and be in violation of the CWA by discharging pollutants from the Landfill to the Drainage Channel, and thus to the Ammonoosuc River, without NPDES authorization;

b. Order Defendants to comply with the CWA by ceasing all unauthorized pollutant discharges to the Drainage Channel or the Ammonoosuc River, seeking NPDES permit authorization for any future pollutant discharges to the Drainage Channel or Ammonoosuc River, and complying with the discharge limitations, monitoring requirements, and other requirements of such permit if and when issued;

c. Order Defendants to implement measures to remedy, mitigate, or offset the harm to the environment caused by the violations alleged herein;

d. Assess an appropriate civil penalty against Defendants for each day of each violation of the CWA occurring from March 8, 2013, forward (Count I) or from May 15, 2015, forward (Count II), as provided by 33 U.S.C. §§ 1319(d), 1365(a), and 40 C.F.R. §§ 19.1–19.4.

e. Award Plaintiffs their costs of litigation (including reasonable attorney and expert witness fees), as provided by 33 U.S.C. § 1365(d);

f. Order such other relief as the Court deems appropriate.

PLAINTIFFS,

TOXICS ACTION CENTER, INC., and
CONSERVATION LAW FOUNDATION

Dated: July 15, 2020

/s/ Thomas Irwin
Thomas Irwin (NH Bar #11302)
Conservation Law Foundation
27 North Main Street
Concord, NH 03301
(603) 573-9139
Attorney for Conservation Law Foundation
Email: tirwin@clf.org

/s/ Daniel J. Mullen
Daniel J. Mullen (NH Bar #1830)
Ransmeier & Spellman P.C.
One Capitol Street
Concord, NH 03301
(603) 410-6643
Attorney for Toxics Action Center
Email: dmullen@ranspell.com

/s/ Joshua R. Kratka
Joshua R. Kratka
Charles C. Caldart
Admitted pro hac vice
National Environmental Law Center
294 Washington Street, Suite 500
Boston, MA 02108
(617) 747-4333
Attorneys for Conservation Law Foundation and Toxics Action Center
Email: josh.kratka@nelconline.org

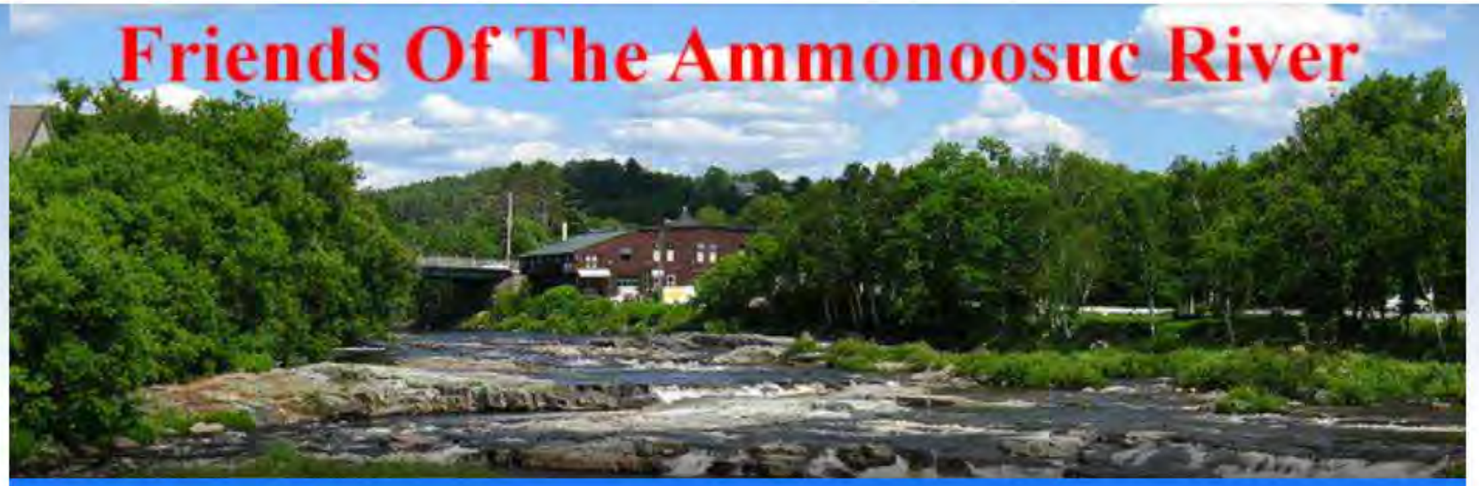
/s/ David A. Nicholas
Admitted pro hac vice
20 Whitney Road

Newton, MA 02460
(617) 964-1548
Attorney for Toxics Action Center
Email: dnicholas100@gmail.com

CERTIFICATE OF SERVICE

I hereby certify that on September 3, 2020, I re-filed a copy of this First Amended Complaint and the accompanying exhibits, as directed by the Court, with the Court's ECF system, which will cause an electronic notice of such filing to be sent to all counsel who have appeared in this case.

/s/ Joshua R. Kratka
Joshua R. Kratka



Group by Save Forest Lake

Friends Of The Ammonoosuc River

Public group · 67 members

About | Discussion | Members | Events | Media

Join Group

Save Forest Lake shared a link.
February 16 at 7:25 AM ·

Something to keep in mind as DES decides whether or not to permit a 2nd PFAS-emitting mega-dump upstream of the Ammonoosuc River and Littleton. What could possibly go wrong?
Keep in mind, the prevailing winds blow towards both Forest Lake and the Ammonoosuc from the proposed landfill site. Together, we can #StopNorthernTrash and #ProtectTheAmmonoosuc

BRIDGEMI.COM

PFAS is in fish and wildlife. Researchers prowl Michigan for clues. | Bridge Michigan

2 1 Comment Seen by 37

Like Share

All Comments

Amy Delventhal
#StopNorthernTrash #ProtectTheAmmonoosuc

Like · 6d

About

This group was formed in order to share information, news stories, pictures, and personal memories relative to the Ammonoosuc River, a designat... See More

Public
Anyone can see who's in the group and what they post.

Visible
Anyone can find this group.

New Hampshire · Coös County, New Hampshire · Grafton County, New Hampshire

General Group

DES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

July 2020 Tri-Annual/2020 Annual Water Quality Monitoring Results North Country Environmental Services, Inc. (NCES) Landfill Bethlehem, New Hampshire

NHDES Site #: 198704033
Project Type: Water Quality Monitoring
Project Number: 1737

Prepared For:

North Country Environmental Services, Inc. (NCES)
Trudeau Road, P.O. Box 9
Bethlehem, New Hampshire 03574-0009
Phone Number (603) 869-3366
RP Contact Name: Mr. Joe Gay
RP Contact Email: John.Gay@casella.com

Prepared By:
Sanborn, Head & Associates, Inc.
20 Foundry Street
Concord, New Hampshire 03301
Phone Number: (603) 229-1900
Contact Name: Timothy M. White, P.G.
Contact Email: twhite@sanbornhead.com

Date of Report: August 31, 2020

Groundwater Monitoring Report Cover Sheet

Site Name: **North Country Environmental Services, Inc. (NCES) Landfill**

Town: **Bethlehem, NH**

Permit #: **GWP-198704033-B-007**

Type of Submittal (*Check all that apply*)

- ☒ Periodic Summary Report (*year*): **2020**
- ☒ Data Submittal (*month and year per Condition #7 of Permit*): **July 2020**

Check each box where the answer to any of the following questions is "YES"

Sampling Results

- ☒ During the most recent monitoring event, were any new compounds detected at any sampling point?
  Well/Compound: **Manganese – B-924L (below AGQS, SMCL, and site background). Refer to Exhibit 3 in text for discussion. Refer to Appendix D for discussion of PFAS.**

- ❑ Are there any detections of contamination in drinking water that is untreated prior to use?
  Well/Compound: **NO**
  - □ Do compounds detected exceed AGQS?

- ❑ Was free product detected for the first time in any monitoring point? **NO**
  - □ Surface Water (*visible sheen*)
  - □ Groundwater (*1/8" or greater thickness*)
    Location/Thickness:

Contaminant Trends

- □ Do sampling results show an increasing concentration trend in any source area monitoring well? **NO - Observed trends for contaminants and other parameters are discussed in the report. Although variable, iron, manganese, and/or arsenic have shown possible increasing concentration trends for the past few reporting periods at three wells in the GMZ (MW-802, MW-803, and B-919M), which are inferred to be related to the persistent reducing conditions associated with the former unlined landfill.**
- □ Well/Compound:
- ☒ Do sampling results indicate an AGQS violation in any of the GMZ boundary wells?
  AGQS exceedances at monitoring wells for the current period are indicated below and are generally consistent with recent results.

  Well/Compound:

Arsenic: B-102D, B-103S, B-103D [inside GMZ]
Manganese: B-102D, B-103S, B-103D, B-304DR, MW-801, MW-802, MW-803, B-919M [inside GMZ]; and B-926U [outside GMZ]

1,4-dioxane: B-304UR, B-304DR [inside GMZ]
PFOA: B-304UR, B-304DR, B-919U [inside GMZ], B-915U [outside GMZ]

Recommendations

☒ Does the report include any recommendations requiring DES action? (*Do not check this box if the only recommendation is to continue with existing permit conditions.*) **Sample monitoring wells B-304UR and B-304DR for VOCs, 1,4-dioxane, chloride, and bromide in September 2020.**
Analyze B-916D for total (unfiltered) iron and manganese in November 2020.

SANBORN HEAD

Building Trust. Engineering Success.

2020 SUMMARY OF WATER QUALITY MONITORING RESULTS AND SUBMITTAL OF JULY 2020 MONITORING RESULTS

North Country Environmental Services, Inc. (NCES) Landfill
Bethlehem, New Hampshire
NHDES Site No. 198704033

Prepared for North Country Environmental Services, Inc. (NCES)
File No. 2637.07
August 2020

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

On behalf of NCES, Sanborn, Head & Associates, Inc. (Sanborn Head) prepared this annual summary of the water quality monitoring data for the NCES landfill (Site) in Bethlehem, New Hampshire. This report provides a discussion of water quality conditions in consideration of the data collected during the 2020 monitoring year, including data collected from the November 2019, April 2020 and July 2020 tri-annual monitoring events required by Site Groundwater Management and Release Detection Permit GWP-198704033-B-007 (the Permit), issued by New Hampshire Department of Environmental Services (NHDES) on April 12, 2018, and revised on October 19, 2018. This report also serves to transmit the July 2020 tri-annual monitoring data required by the Permit. In addition, this report presents results of Assessment Monitoring for monitoring wells MW-701 and B-918M, pursuant to NHDES' October 21, 2019 letter[1]. A table summarizing the comparison to background concentrations is included as Table 1. A summary of the development of background conditions is included as Appendix A.

2.0 SITE WATER QUALITY MONITORING PROGRAM

The current facility Permit provides for 43 groundwater monitoring wells, five sampling locations to the north of the Site consisting of seeps/springs on the slope between the Site and the Ammonoosuc River, and three surface water (River) sampling locations along the southern shoreline of the River. A Locus Plan, showing general topography in the area of the Site, is provided as Figure 1. A Site Features Plan is provided as Figure 2. Permit monitoring locations are summarized in Exhibit 1 below:

Exhibit 1
Summary of Permit Monitoring Locations – July 2020

Groundwater Management Wells					
100-Series	B-102S	B-102D	B-103S	B-103D	
Other	MW-604				
Release Detection Wells					
800-Series	MW-801	MW-802	MW-803		
900-Series	B-903U	B-903L	B-904U	B-904L	B-914U
	B-914L	B-915U	B-915M	B-915D	B-916U
	B-916M	B-916D	B-917U	B-909	B-917D
	B-918U	B-918M	B-918D	B-919U	B-919M
	B-919D	B-923U	B-924U	B-924L	B-925U
	B-925L	B-926U	B-926L	B-927U	B-927M
	B-927L				
Other	B-304UR	B-304DR	MW-603	MW-701	

[1] October 21, 2019 Letter from Mr. Jamie O'Rourke (NHDES) to Mr. John Gay (NCES): "July 2019 Tri-Annual/2019 Annual Water Quality Monitoring Results, prepared by Sanborn, Head & Associates, Inc., and dated August 22, 2019"; and "August 2019 PFAS Groundwater Results Data Transmittal, prepared by Sanborn, Head & Associates, Inc., and dated September 3, 2019".

Notes:

1. This table reflects the Permit revision issued by NHDES on October 19, 2018.
2. Couplet monitoring well installations include a shallow or upper well (designated S or U) and a deeper or lower well (designated D or L). At triplet well cluster locations, monitoring wells were installed as upper, lower and mid-level (designated M).

Surface Water Sampling Locations	
Springs/Seeps	**Ammonoosuc River**
S-101	AR-1
S-108	AR-2
S-109	AR-3
S-1 (Main Seep)	
SF-1 (surface flow from S-1)	

Notes:
River sampling locations (designated AR-1 through AR-3) are located down slope from the seeps, and were established in conjunction with the Site GMZ. The GMZ delineation is shown on an October 26, 2017 plan titled "Ground Water Management Zone Plan for Lands of North Country Environmental Services, Inc. and Forest Acquisitions, Inc.", previously submitted to NHDES.

A comparison to background groundwater quality is provided on Table 1 (refer to Appendix A for information about calculation and selection of background concentrations). A summary of groundwater elevations is provided in Appendix B.1 and values from July 2020 are presented on Figure 3. Summaries of groundwater and surface water quality data are provided in Appendices B.2 and B.3, respectively. Time-series plots for concentrations of select analytes at groundwater and surface water locations are provided in Appendices C.1 and C.2, respectively. Appendix D.2 provides bar charts summarizing groundwater PFAS data. Sanborn Head's Field Sampling Summary forms for the July 2020 monitoring event are provided as Appendix E. Analytical laboratory reports are included in Appendix F.

3.0 JULY 2020 MONITORING

Sanborn Head performed the most recent tri-annual monitoring at the Site on July 13 through 16, 2020. The permit locations specified for the July 2020 sampling event included: 43 groundwater samples, five surface water spring/seep samples, and three River samples.

Samples were submitted to Eastern Analytical, Inc. (EAI) of Concord, New Hampshire (a NH-certified laboratory) for the analyses specified in the Permit. The laboratory analytical data reports from EAI for the July 2020 monitoring event, which indicate the sample-specific analyses and associated analytical methods, are provided for reference in Appendix F.

Consistent with the Permit, the analytical results for the July 2020 monitoring event are summarized below following the general organizational format used in the April 2020 Summary Report. This section provides a comparison of July 2020 monitoring results to

background values, a comparison to applicable standards, and a discussion of results. An assessment of water quality trends is included in the subsequent section ("2020 Summary of Water Quality Findings"). Background values are described in Appendix A and shown in Table 1. Applicable standards are shown in Table B.2.

3.1 Groundwater Results

3.1.1 Background Evaluation

This section compares groundwater analytical results of the July 2020 sampling event to the identified background concentrations, consistent with Env-Or 702.03. Background concentrations, including calculation methods, are described in Appendix A. Refer to Table A.1 for historical data used to identify background values. A summary of background groundwater exceedances is included as Table 1. Refer to Appendix B.2 for recent groundwater analytical data and applicable standards for groundwater.

Detected concentrations exceeding background values for the first time at a monitoring location are summarized in Exhibit 2. Other detected concentrations are either below background concentrations or have previously exceeded background concentrations in the period of record for a given location.

Exhibit 2
Summary of First-Time Background Concentration Exceedances – July 2020

Location	Analyte	Concen-tration / Value	Previous Max/Min	July 2020 Site Background (refer to Table 1)	GW-1 (AGQS)	# of sampling events for analyte	Comments
Release Detection Wells Outside the GMZ							
B-904U	Chemical Oxygen Demand	25 mg/l	15 mg/l Apr. 2020	24 mg/l	NS	61	COD has been sporadically detected at B-904U at concentrations ranging from 10 to 15 mg/l since this well was first sampled in November 2000. The COD concentration in July 2020 was only slightly above the sitewide COD background value. Other parameters at B-904U in July 2020 were within the range of historical results.

Location	Analyte	Concen-tration / Value	Previous Max/Min	July 2020 Site Background (refer to Table 1)	GW-1 (AGQS)	# of sampling events for analyte	Comments
B-927U	Iron, Dissolved	0.73 mg/l	0.13 mg/l Apr 2018	0.64 mg/l	0.3 mg/l (SMCL)	8	July 2020 was the second time iron was detected at B-927U within its relatively short period of record (8 sampling events since Nov. 2017). Iron at B-927U in July 2020 was only modestly higher than the sitewide iron background and was within the range of values historically measured at upgradient predecessor well (now decommissioned) B-921M.
Release Detection Wells Inside the GMZ – Impacts Anticipated from Former Unlined Landfill							
B-919D	Iron, Total	0.83 mg/l	0.09 mg/l Jul 2016	0.64 mg/l	0.3 mg/l (SMCL)	9 (first time analysis for total Iron)	B-919D was inadvertently analyzed for total (unfiltered) metals in July 2020. B-919D is an overburden well and the elevated iron and manganese concentrations above typical values for this location (dating back to August 2001) are related to suspended solids in the July 2020 unfiltered sample.
B-304DR	Bromide	0.65 mg/l	0.36 mg/l Apr 2020	0.4 mg/l (inside GMZ)	NS	43	Along with several other parameters, elevated bromide concentrations have been recorded at B-304UR and B-304DR since earthwork was performed upgradient from these locations in summer 2019. The bromide concentration at B-304DR in July 2020 was slightly lower than the July 2020 result from B-304UR (0.74 mg/l), and lower than concentrations at B-304UR in November 2019 (1.5 to 1.7 mg/l), consistent with a slightly longer flow path to the deeper B-304DR screen interval.

Location	Analyte	Concen-tration / Value	Previous Max/Min	July 2020 Site Background (refer to Table 1)	GW-1 (AGQS)	# of sampling events for analyte	Comments

Notes:
mg/l = milligrams per liter, which are equivalent to parts per million (ppm)
NS = no standard
1. The number of sampling events for an analyte includes primary samples and re-samples collected inclusive of the current monitoring period, but does not include field duplicates, if collected.
2. Refer to Appendix A for a discussion of methods used to develop background concentrations.
3. "GW-1" refers to the New Hampshire GW-1 Groundwater Standards as defined in New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998, with 2000 through 2018 revisions/addenda). GW-1 Groundwater Standards are intended to be equivalent to the Ambient Groundwater Quality Standards (AGQSs) promulgated in Env-Or 600 (June 2015 with October 2016, September 2018, September 2019, and May 2020 amendments). For analytes where GW-1 and AGQS values differ, the values presented in this table reflect the AGQSs in the latest Env-Or 600 update. The AGQS/GW-1 Groundwater Standards are intended to be protective of groundwater as a source of drinking water.
"SMCL" refers to the USEPA Secondary Maximum Contaminant Levels as presented in the National Primary Drinking Water Standards (May 2009). The SMCLs are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These analytes are not considered by USEPA to present a risk to human health at the SMCL.

3.1.2 First-Time Detects

As summarized in Exhibit 3 below, one location (B-916D) indicated a first-time detect of iron in July 2020 (at a concentration below site background), and another location (B-924L) indicated a first-time detect of manganese in July 2020 (at a concentration below the site background concentration and AGQS). First-time detects of PFAS analytes are summarized in Appendix D; first-time detects of PFAS analytes were all below the respective AGQS.

Exhibit 3
Summary of First-Time Detects at Groundwater Monitoring Locations – July 2020

Location	Analyte	*milligrams per liter (mg/l) unless otherwise noted*			
		NHDES AGQS	Site Background	July 2020 Concentration	Laboratory Reporting Limit
B-916D	Iron	None	0.64	0.083	0.05
B-924L	Manganese	0.84	0.19	0.0087	0.005
Refer to Appendix D for a summary of first-time PFAS detects.					

Refer to Exhibit 2 and Section 3.1.4.3 for a discussion of iron results from B-919D in July 2020.

3.1.3 Groundwater Quality Standard Exceedances

Detected concentrations in July 2020 groundwater samples which exceeded applicable standards are indicated on Tables 1 and B.2, and summarized in Exhibit 4. Concentrations

are compared to the AGQS; if no AGQS is available, then concentrations are compared to the USEPA SMCLs, if available. July 2020 was the first sampling event in 2020 with the lower PFAS AGQS, and four locations indicated PFOA concentrations above the new AGQS. There were only two first-time SMCL exceedances (iron) indicated in July 2020 monitoring.

Exhibit 4
Summary of Exceedances of AGQS or SMCL – July 2020

Analyte	AGQS (or SMCL if no AGQS)	Exceedance in July 2020		First-Time Exceedance July 2020	
		Within GMZ	Outside GMZ	Within GMZ	Outside GMZ
AGQS Exceedance					
Manganese	0.84 mg/L	B-102D, B-103S, B-103D, B-304DR, MW-801, MW-802, MW-803, B-919M	B-926U	None	None
Arsenic	0.01 mg/L	B-102D, B-103S, B-103D	None	None	None
1,4-Dioxane	0.32 µg/l	B-304UR, B-304DR	None	None	None
PFOA	12 ng/l	B-304UR, B-304DR, B-919U	B-915U	July was the first sampling event in 2020 with lower PFAS AGQS in effect	
				B-304UR, B-304DR, B-919U	B-915U
SMCL Exceedance (analytes with no AGQS)					
pH[1]	6.5 to 8.5 s.u.	B-102S, B-304UR, B-304DR, MW-802, MW-803, B-919U	B-914U, B-915U, B-916U, B-916M, B-916D, B-917D, B-918U, B-924L, B-925L, B-927U	None	None
Iron	0.3 mg/L	B-102D, B-103S, B-103D, MW-801, MW-802, MW-803, B-919M, B-919D (total)	B-914U, B-927U, B-927M	B-919D (total – first time analysis)	B-927U

Notes:
1. The SMCL for pH is a range from 6.5 to 8.5 s.u. Locations indicated as outside the SMCL range for pH indicated values below 6.5 s.u.
2. "First-time exceedance" indicates that July 2020 was the first-time the AGQS or SMCL was exceeded in a sample collected from a given location in the respective period of record. Period of record varies by location.

mg/l = milligrams per liter
µg/l = micrograms per liter
ng/l = nanograms per liter

3.1.4 Groundwater Quality Assessment

This section provides a comparison to background values, an assessment of trends for analytes with first time background exceedances, discussion of first time detects or exceedances of standards in July 2020, including a comparison to similarly identified analytes from previous sampling events.

3.1.4.1 Volatile Organic Compounds (VOCs)

Only one VOC (1,4-dioxane) was detected at two locations (B-304UR and B-304DR) in July 2020 monitoring – refer to Section 3.1.5 for discussion.

3.1.4.2. Semi-Volatile Organic Compounds (SVOCs)

As specified in the Permit, groundwater samples were analyzed for SVOCs in the July 2020 sampling event (31 locations), but were not detected at any location.

3.1.4.3 Inorganic Parameters

Note: As indicated in previous transmittals, several metals (principally iron, arsenic, and manganese) are naturally occurring in soil at the Site, and elevated concentrations of these metals have been detected in groundwater generally at locations downgradient of the former unlined landfill, which generally have reducing conditions. Therefore, locations within and adjacent to the GMZ are anticipated to typically exhibit higher metals concentrations in groundwater than other areas of the site.

Metals

- **Arsenic:** The arsenic concentrations at three monitoring wells located inside the GMZ indicated an exceedance of background (0.0011 mg/l) in July 2020.

Outside the GMZ	No background exceedances
Inside the GMZ	B-102D, B-103S, B-103D

Arsenic concentrations at these monitoring wells in July 2020 of 0.036 mg/l (B-103S) to 0.062 mg/l (B-102D) were within the range of recent concentrations recorded at these locations. Elevated arsenic concentrations inside the GMZ are consistent with reducing conditions associated with the former unlined landfill.

- **Manganese:** The manganese concentrations at 11 monitoring wells indicated an exceedance of background (0.19 mg/l) in July 2020.

Outside the GMZ	B-926U, B-927M, B-927L
Inside the GMZ	B-102D, B-103S, B-103D, B-304DR, MW-801, MW-802, MW-803, B-919M

Concentrations at wells inside the GMZ ranged from 1.2 mg/l (B-103D) to 9.2 mg/l (MW-803 primary [9.1 mg/l in duplicate sample]), while concentrations at wells outside the GMZ ranged from 0.23 mg/l (B-927M) to 2.7 mg/l (B-926U).

Manganese concentrations at monitoring wells indicating exceedances of the manganese background in July 2020 were generally consistent with recent concentrations, with the exceptions of: B-927M (0.23 mg/l; only slightly higher than the previous maximum concentration at this location [0.22 mg/l in August 2019]); B-927L (0.25 mg/l; only slightly higher than the previous maximum concentration at this location [0.23 mg/l in July 2018]); and the first-time detect of manganese at B-924L in

July 2020 (0.0087 mg/l, below the site background concentration and AGQS). Although the manganese concentrations at B-927M have typically been higher than historical results from decommissioned predecessor well B-921M, orange iron oxide "partings" were observed in soils from the screened interval depth of B-927M during drilling/well installation, which are anticipated to also include elevated naturally-occurring manganese. Elevated manganese concentrations inside the GMZ/near the GMZ are consistent with reducing conditions associated with the former unlined landfill.

- **Iron:** The iron concentrations at 10 monitoring wells indicated an exceedance of background (0.64 mg/l) in July 2020.

Outside the GMZ	B-927U, B-927M
Inside the GMZ	B-102D, B-103S, B-103D, MW-801, MW-802, MW-803, B-919M, B-919D

Concentrations at wells inside the GMZ ranged from 2.5 mg/l (B-919M) to 75 mg/l (MW-803 duplicate [74 mg/l in primary sample]).

Iron concentrations at monitoring wells within the GMZ in July 2020 were generally similar to recent concentrations. Elevated iron concentrations inside the GMZ are consistent with reducing conditions associated with the former unlined landfill. As discussed in Exhibit 2, B-919D was inadvertently analyzed for total (unfiltered) iron and manganese for the first time in July 2020, and indicated an iron concentration (0.83 mg/l) higher than previous dissolved (filtered) results (0.09 mg/l was previous maximum concentration). The elevated iron concentration in B-919D is inferred to be related to suspended sediment in the total (unfiltered) sample. One of the two wells located outside the GMZ with background exceedances for iron indicated new period of record maximum concentrations: B-927U indicated a concentration of 0.73 mg/l, up from the previous maximum of 0.13 mg/l (April 2018). For reference, the iron concentration at B-927U in July 2020 was within the range of historical results from decommissioned predecessor well B-921U.

In November 2020, we propose to analyze the only bedrock monitoring well at the site (B-916D) for total (unfiltered) iron and manganese to supplement the July 2020 dissolved (filtered) results from this location.

- **Barium:** The background barium concentration (0.025 mg/l) was only exceeded at one location in July 2020: B-102S (inside the GMZ). The concentration at B-102S (0.1 mg/l) in July 2020 was within the range of recent concentrations at this location. As summarized in Appendix A, the barium background concentration increased from 0.015 mg/l to 0.025 mg/l in July 2020.

Bromide

No bromide results exceeded the background concentration (0.1 mg/l) outside the GMZ in July 2020 monitoring. Bromide exceeded the background concentration inside the GMZ (0.4 mg/l) at two locations (B-304UR and B-304DR). Refer to Section 3.1.5 for further discussion of B-304UR and B-304DR.

Chloride

As indicated on Table 1 and discussed in Appendix A.1, locations indicating exceedances of the chloride background [7 mg/l] (and sometimes also specific conductance) are typically one of three categories, discussed below.

1) Shallow locations near roadways or downgradient of roadways and inferred to be in part or in whole related to vehicle traffic and associated soil disturbance.

2) At wells within the GMZ, chloride detections are consistent with residual water quality effects related to the former unlined landfill. Deeper intervals may also indicate elevated chloride concentrations within the GMZ. A list of locations is below:

Outside the GMZ	MW-701, B-915U, B-918U, B-926U, B-927U
Inside the GMZ	B-102S, B-304UR, B-304DR, MW-604, MW-802, MW-803, B-919U

Chloride concentrations at these locations ranged from 7.4 mg/l (B-102S) to 110 mg/l (B-304UR), and are generally within the range of recent results, except MW-604, which indicated the highest concentration (26 mg/l) in its period of record (previous maximum was 21 mg/l in July 2019); and B-304DR, which indicated the highest concentration (100 mg/l) in its period of record (previous maximum was 60 mg/l in April 2020) – refer to discussion in Section 3.1.5. Locations outside the GMZ (listed above) with elevated chloride concentrations have been identified in previous sampling events (Refer to Table 1).

3) Periodically or consistently elevated chloride (and sometimes also specific conductance) at intermediate and deep wells outside the GMZ, and generally northwest of the landfill. These intermediate and deep wells sporadically indicate the presence of anthropogenic influence (e.g., sporadic detection of VOCs related to earthwork associated with previous phases of landfill development) and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.

- B-915M
- B-915D
- B-916M
- B-916D
- B-917D
- B-918M
- B-926L

Chloride concentrations at these locations ranged from 7.6 mg/l (B-916D) to 190 mg/l (B-915D), and were generally within the range of recent results with the following exceptions:

B-915D	The chloride concentration at B-915D in July 2020 (190 mg/l) was the highest in this well's period of record (previous high value was 76 mg/l [July 2018]). Specific conductance (678 µS/cm) was also, above the previous high value (349 µS/cm in July 2018). VOCs were not detected at B-915D in July 2020 and the results for other analytes were generally consistent with recent values. Chloride concentrations have been variable at B-915D through its period of record but concentrations have increased over the three rounds of sampling performed starting in July 2016.	Historically, elevated chloride had been detected at former monitoring well MW-402LR (located approximately 590 feet upgradient of B-916M and approximately 315 feet upgradient of B-915D), where a transient high concentration of 130 mg/l occurred in July and November 2012 before concentrations decreased. As discussed in the 2017 Annual Report, the increase in chloride concentrations observed in 2011 and 2012 in groundwater at MW-402LR and subsequent decrease was likely a transient effect associated with the Stage IV/Phase 2 construction project, which was completed in 2011. The elevated chloride concentrations at "middle" and "deep" wells is inferred to represent downgradient migration of groundwater from the former MW-402LR location.
B-916M	The chloride concentrations at B-916M have been increasing over time and the July 2020 concentration was the highest in this well's period of record. Chloride was detected at B-916M at 110 mg/l (previous high value was 96 mg/l [April 2020]). VOCs were not detected at B-916M in July 2020 and the results for other analytes were generally consistent with recent values. Elevated chloride and specific conductance (sporadic) at B-916M have been identified in previous events and are inferred to be related to previous phases of landfill development.	
B-917D	The chloride concentration at B-917D in July 2020 (34 mg/l) was only slightly higher than concentrations recorded since 2012 (previous period of record maximum was 31 mg/l in September 2012). Other parameters at B-917D were within the range of recent results.	

Nitrate

Nitrate exceeded the background concentration (2.5 mg/l) at only two locations (B-918U and B-304UR) in July 2020 monitoring. The nitrate concentration at B-918U (outside the GMZ) was 3.2 mg/l, which is lower than the April 2020 concentration at this location when a period of record maximum concentration was recorded (6 mg/l). The nitrate concentration at B-304UR (inside the GMZ) was 3.9 mg/l, which is within the range of previous nitrate concentrations at this location since April 2017 (1.2 to 5.9 mg/l).

Total Kjeldahl Nitrogen (TKN)

Consistent with previous results, two locations, one inside the GMZ (MW-803) and one outside the GMZ (B-926U), indicated exceedances of the TKN background concentration (0.92 mg/l).

- MW-803 indicated a TKN concentration of 1.6 mg/l (1.7 mg/l in the duplicate sample), which is within the range of concentrations recorded at this location in recent monitoring.

- B-926U had its second detection of TKN in July 2020 (1.4 mg/l), which was also the highest concentration recorded in its relatively short period of record (nine sampling events). Other parameters at B-926U were generally consistent with recent results, with the exception of COD (discussed below).

Chemical Oxygen Demand (COD)

Two locations inside the GMZ (MW-802 and MW-803) and three locations outside the GMZ (B-904U, B-926U and B-927M) indicated COD concentrations in exceedance of the site background value (24 mg/l) in July 2020. The COD background value exceedances in July 2020 were as follows:

Inside GMZ	▪ MW-802 indicated a concentration of 27 mg/l, which is within the range of results recorded since July 2017, when a recent high concentration of 120 mg/l was recorded.
	▪ MW-803 indicated a concentration of 69 mg/l (71 mg/l in the duplicate sample), which is the highest concentration recorded at this location, the duplicate result being slightly higher than the previous maximum concentration (70 mg/l in April 2020). Other parameters at MW-803 were generally consistent with recent results.
Outside GMZ	▪ B-904U indicated a concentration of 25 mg/l in July 2020, the highest at this location in its period of record, but only slightly higher than the site background value. The concentration at B-904U was a first-time exceedance of the site background at that location. Refer to Exhibit 2 for a summary.
	▪ B-926U indicated a new maximum concentration (48 mg/l) in its relatively short period of record (9 sampling events). The previous maximum concentration at B-926U was 28 mg/l. Other parameters at B-926U were generally consistent with recent results, with the exception of TKN, discussed above. ▪ B-927M indicated a concentration of 79 mg/l, which was within the range of concentrations previously recorded at this location.

3.1.4.4 Per- and Polyfluoroalkyl Substances (PFAS)

Samples for PFAS analysis were collected from 14 monitoring wells at the site in July 2020. Consistent with 2019 results, perfluorooctanoic acid (PFOA) was detected at 7 of the 14 sampling locations (B-304UR, B-304DR, MW-701, MW-802, B-915U, B-918M, and B-919U), at concentrations ranging from 8.72 ng/l (B-918M) to 24.8 ng/l (B-304DR) . Concentrations at five locations (B-304UR, B-304DR, B-915U, B-918M, and B-919U) exceeded the current PFOA AGQS[2] (12 ng/l) in July 2020. Perfluorooctanesulfonic acid (PFOS) was detected in July 2020 at only one location: B-915U at 5.29 ng/l. As indicated in Appendix D, PFNA and PFHxS were not detected at any location in July 2020. Concentrations of these four regulated PFAS analytes in July 2020 were generally lower

[2] With the signing of HB1264 into law on July 23, 2020 the State of New Hampshire established Maximum Contaminant Levels (MCLs) for four PFAS compounds: PFOA (12 ng/l), PFOS (15 ng/l), PFHxS (18 ng/l), and PFNA (11 ng/l). The establishment of the PFAS MCLs also established equivalent AGQSs for these analytes.

than previous concentrations, with the exceptions of PFOA at B-304UR (22.7 ng/l, compared to previous high of 6.26 ng/l) and B-915U (14.5 ng/l, compared to previous high of 14.2 ng/l).

3.1.5 B-304UR/B-304DR

In July 2020, several analytes at B-304UR and B-304DR indicated some variability from the April 2020 results, inferred to be related to seasonality, and periods of generally lower precipitation in summer 2020. At B-304UR, 1,4-dioxane and bromide were not detected in April 2020, but were detected again in July 2020 – this time at lower concentrations than in November 2019. Similarly, concentrations of chloride, COD, and nitrate at B-304UR in July 2020 were higher than in April 2020, but were similar to (nitrate) or lower (chloride and COD) than in November 2019. As discussed above, PFOA at B-304UR in July 2020 was higher than the sporadically detected values at B-304UR in previous sampling (five prior events). At B-304DR, the 1,4-dioxane, bromide, chloride, and manganese concentrations in July 2020 were the highest values recorded at this location in its period of record. Of these analytes, 1,4-dioxane, bromide and chloride concentrations in B-304DR have been lower than the concentrations recorded in B-304UR in November 2019, while manganese concentrations in B-304DR have historically been higher than in B-304UR, likely due to its deeper screened interval where generally more reducing conditions can be present. Given that the screened interval of B-304DR is deeper than that of B-304UR, elevated concentrations of 1,4-dioxane and bromide concentrations related to the surficial earthwork in summer 2019 would be expected to attenuate more slowly at the deeper well, B-304DR. Dichlorodifluoromethane (DCDFM – Freon 12) was detected at B-304DR in April 2020 but was not detected in July 2020.

Together, the July 2020 results are consistent with continued residual effects related to the earthwork that was performed upgradient of these wells in summer 2019 to remove old, unused landfill infrastructure. On-going releases from the landfill are not indicated in the B-304 wells given the absence of VOC detections at nearby/upgradient wells, as well as surface water samples downgradient of the B-304 wells in July 2020.

Although not scheduled as part of Permit monitoring, analysis for VOCs, 1,4-dioxane, chloride, and bromide are proposed for B-304UR and B-304DR in September 2020 as part of on-going monitoring of these locations (refer to Section 6 below).

3.2 Surface Water Quality Results

In July 2020, VOCs were not detected in surface water samples, and the surface water results were generally consistent with previous sampling events, with the following observations (refer to Table B.3 and Appendix C.3):

- Barium at SF-1 in July 2020 (0.011 mg/l) was the highest concentration recorded at that location, but only slightly higher than the previous high (0.01 mg/l, detected both July 2009 and July 2015), and lower than the barium concentration at the Main Seep (S-1) in July 2020 (0.017 mg/l). Barium concentrations in surface water were similar to the highest concentration in groundwater in July 2020 (0.01 mg/l at B-102S), and were well below the NHDES AGQS/GW-1 (2 mg/l).

- Chloride concentrations at Main Seep S-1, SF-1, and S-101 in July 2020 were generally similar to or less than concentrations recorded at these locations in April 2020. The July 2020 results continue to confirm the transient nature of the chloride "pulse" that was detected at these locations in April and July 2019 related to a short-term road salt mixing operation in the Tucker pit in late 2018.

A summary of the iron and manganese results at Seep S-1 and SF-1 is provided below:

- The total iron concentrations at Seep S-1 (2.2 mg/l) and SF-1 (1.6 mg/l), were both within the range of historical results. Consistent with typical previous results, total iron concentrations at both the Seep S-1 and SF-1 locations exceeded the SMCL for iron (0.3 mg/l) in July 2020.

- The total manganese concentrations at Seep S-1 (0.42 mg/l) and SF-1 (0.34 mg/l), were both within the range of historical results. Consistent with results since April 2012, total manganese concentrations at both the Seep S-1 and SF-1 locations were below the manganese AGQS (0.84 mg/l) in July 2020.

The July 2020 iron and manganese results at S-1 and SF-1 are consistent with the trends of generally decreasing concentrations at these locations since the 1990s (S-1) and mid-2000s (SF-1).

Iron and manganese concentrations measured in the Ammonoosuc River samples in July 2020 monitoring indicate comparable conditions in the upstream and downstream sampling locations, and do not indicate significant impact to the River's surface water quality. The iron and manganese concentrations in the Ammonoosuc River samples for July 2020 were below the respective SMCLs and AGQS.

Surface water samples were analyzed for an expanded list of metals in July 2020. The results are indicated on Table B.3 and a summary of detections is provided below. All surface water concentrations were below the respective AGQS for these metals.

Analyte	Surface Water Detection Summary
Antimony	No detections
Arsenic	3 detections (Seep S-1, SF-1, and S-108)
Barium	Detected at all surface water locations
Beryllium	No detections
Cadmium	No detections
Chromium	1 detection (S-108)
Lead	1 detection (S-108)
Nickel	1 detection (S-108)
Silver	No detections
Thallium	No detections

4.0 2020 SUMMARY OF WATER QUALITY FINDINGS

This section provides a summary of groundwater quality results from the 2020 reporting period (November 2019 through July 2020, inclusive). Time series plots of specific analytes are included in Appendix C.

4.1 Groundwater Results

4.1.1 VOCs

Of the 43 permit monitoring wells sampled for VOCs during the reporting period (i.e. those locations sampled one or more times between November 2019 and July 2020), VOCs were detected in groundwater samples from three wells: B-304UR (1,4-dioxane only), B-304DR (1,4-dioxane and DCDFM), and B-927M (DCDFM only).

Consistent with previous results, VOC detections for these wells continue to be limited to 1,4-dioxane and DCDFM. 1,4-dioxane concentrations have generally been above the AGQS in this reporting period, while all the DCDFM detections have been at concentrations well below the AGQS of 1,000 µg/l.

- **B-304UR:** 1,4-Dioxane results varied during the reporting period, from 6.9 µg/l (November 2019), to <0.25 µg/l (April 2020) to 1 µg/l (July 2020).
- **B-304DR:** 1,4-Dioxane was detected at concentrations ranging from 1 µg/l (November 2019) to 2.9 µg/l (July 2020) in the reporting period. DCDFM was detected at B-304DR only in April 2020, at a concentration of 4.3 µg/l in the primary sample and 4.5 µg/l in the duplicate sample. DCDFM was last detected at B-304DR in April 2016 at a concentration of 22 ug/l (duplicate; 19 ug/l in primary).

The results from B-304UR and B-304DR are consistent with continued residual effects related to the earthwork that was performed upgradient of these wells in summer 2019 to remove old, unused landfill infrastructure. On-going releases from the landfill are not indicated in the B-304 wells given the absence of VOC detections at nearby/upgradient wells, as well as surface water samples downgradient of the B-304 wells during this reporting period.

- **B-927M:** DCDFM was detected at 8 µg/l in November 2019 and 21 µg/l in April 2020. The April 2020 concentration was the highest concentration recorded at B-927M (up from the previous high of 17 ug/l in August 2019), but within the range of concentrations recorded at predecessor well B-921M prior to its decommissioning in 2018. As specified in the October 15, 2011 letter from NHDES to NCES, NHDES concurred that there is a reasonable understanding of the source of the DCDFM, and that it is related to impacts from the former unlined landfill. B-927M is scheduled to be sampled next in November 2020.

4.1.2 PFAS

Samples for PFAS analysis in this annual reporting period were collected from 14 monitoring wells (Refer to Table 1 and Appendix D). Consistent with 2019 results, perfluorooctanoic acid (PFOA) was detected at 7 of the 14 sampling locations (B-304UR, B-

304DR, MW-701, MW-802, B-915U, B-918M, and B-919U), at concentrations ranging from 8.72 ng/l (B-918M) to 24.8 ng/l (B-304DR). Concentrations at five locations (B-304UR, B-304DR, B-915U, B-918M, and B-919U) exceeded the current PFOA AGQS (12 ng/l) in July 2020. Perfluorooctanesulfonic acid (PFOS) was detected at three locations in one or more sampling events in this reporting period (MW-701, B-915U and B-918M), all at concentrations below the July 2020 AGQS. As indicated in Appendix D, PFNA was detected only once in the current reporting period, at B-918M (November 2019), at a concentration below the July 2020 AGQS, and PFHxS was not detected at any location in this reporting period. Results for the 21 unregulated PFAS compounds analyzed for during the annual reporting period are also included in Table D.1.

4.1.3 Semi-Volatile Organic Compounds

As discussed above, groundwater samples were analyzed for SVOCs in the July 2020 sampling event (31 locations), but were not detected at any location.

4.1.4 Inorganic Parameters

4.1.4.1 General Water Quality Indicator Parameters

The values of specific conductance, pH, and temperature, and the concentration of COD at site monitoring locations relative to background values at upgradient monitoring wells serve as general indicators of impacts to water quality. Refer to Table 1 for a comparison of the current monitoring period indicator parameter results to background, including an inferred context for background exceedances. In general, the following observations are noted:

- **Temperature:** As shown in Appendix A.2, average temperature at background locations has increased over the period of record. The increase in average temperature in background wells is more readily observed in the April and November data, where the average temperatures prior to 2010 were commonly below 6°C; since 2010, average temperatures are largely (for November) or essentially always (for April) above 6°C. Note on the temperature figure in Appendix A.2, historically, the number of background wells available for calculating the average temperature has varied and some of the high "average" values are based on only one well; therefore the representativeness of these apparent "maximum" values is limited. In addition, lined landfill areas are inferred to increase groundwater temperature through indirect contact with groundwater (thermal diffusion resulting in general heating of the subsurface) and locally reduced groundwater recharge. Therefore, temperature is observed to exceed background values and be increasing in many locations as a result of localized processes and climatic trends affecting background wells, and temperature alone is not indicative of a liner release.

- **pH:** pH measured below the range of background values at locations downgradient of/adjacent to the landfill is inferred to reflect proximity to the lined landfill and effects of the capped area on downgradient soil and groundwater conditions. Together with other water quality data collected from these wells, the lowered pH values are not indicative of a release from the lined facility. Elevated pH historically recorded at B-

916D is inferred to reflect the grout used in monitoring well construction, and is not indicative of a release. At locations with background exceedances, strong trends in pH were not observed.

- **Specific Conductance:** Locations with background exceedances for specific conductance (greater than 253 µS/cm) in the current reporting period include:

Outside the GMZ	MW-701, B-914U, B-915U/M/D, B-916M/D, B-918U, B-926L, B-927U
Inside the GMZ	B-304UR/DR, MW-802/803, B-919U

As indicated above, many of these wells are located outside the GMZ, generally northwest of the landfill, and are screened at intermediate and deep intervals. These intermediate and deep wells sporadically indicate anthropogenic influence (e.g., sporadic detection of VOCs/PFAS), possibly related to earthwork associated with previous phases of landfill development, and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site, and together with other water quality data collected from these wells, the elevated specific conductance values are not indicative of a release from the lined facility.

- **COD:** Locations with exceedances of COD background (24 mg/l) in one or more events in the current monitoring period include:

Outside the GMZ	B-904U, B-926U, B-927M
Inside the GMZ	MW-802, MW-803

The COD concentrations at MW-802 and B-927M were within the range of recent results, while the COD concentrations at B-904U, B-926U, and MW-803 represented period of record maxima at these locations. Other parameters were generally consistent with recent results at these locations, with the exception of TKN at B-926U (discussed below).

4.1.4.2 Metals

Arsenic, Manganese, and Iron

The metals arsenic and manganese were detected at concentrations exceeding their respective AGQS at several locations, typically within the GMZ. Iron was detected at several locations above the USEPA SMCL, most frequently at locations within the GMZ; however, an AGQS has not been established for iron. As indicated in previous annual reports, the well locations where elevated concentrations of metals (arsenic, manganese, iron) have typically been observed are consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions. These conditions act to mobilize naturally-occurring metals such as iron, manganese, and arsenic, resulting in elevated concentrations of these metals in groundwater. These effects thus represent longer-term geochemical changes in groundwater chemistry that are less responsive to

unlined landfill removal (e.g., as compared to the VOC concentrations detected at the same monitoring locations).

A summary of inorganic parameters, including metals, for groundwater samples is provided in Tables 1 and B.2.

Other Metals

As required under the Permit, in addition to the above-referenced metals (arsenic, manganese and iron), the samples collected in July 2020 from select permit-specified Groundwater Management Wells (B-102S, B-102D, B-103S, and B-103D) were analyzed for the additional metals barium, cadmium, chromium, and lead; and samples from B-923U and B-925U were analyzed for antimony, arsenic, barium, beryllium, cadmium, chromium, lead, nickel, silver, and thallium. As discussed above in Section 3.1.4.3, of these metals, only barium was detected above laboratory reporting limits.

- **Barium:** The background barium concentration (0.025 mg/l) was only exceeded at one location in the reporting period: B-102S (inside the GMZ) at a concentration of 0.1 mg/l in July 2020. The concentration at B-102S in July 2020 was within the range of recent concentrations at this location and well below the AGQS (2 mg/l).

4.1.4.3 Bromide

Beginning with the operation of Stage II in approximately 1996, bromide was applied to the waste placed in the Stage II and Stage III landfill cells (which are located in areas that are within [Stage II] or upgradient from [Stage III] the footprint of the former unlined landfill) as a tracer to aid in differentiation of groundwater quality impacts associated with the plume from the former unlined landfill from potential impacts due to potential releases from the lined Stage II and III areas. At that time, the unlined landfill plume was characterized by the presence of elevated concentrations of VOCs in groundwater, as well as other apparent constituents of leachate. Thus, the on-going presence of these VOCs in groundwater in the absence of bromide would be consistent with the pre-existing unlined landfill plume; whereas detection of a different set of VOCs, or an increase in VOC concentrations, with the detection of bromide could potentially be evidence of a new leachate release. Following completion of the unlined landfill re-location project, VOC concentrations in groundwater in the area of the former unlined landfill plume diminished substantially; hence, with the concurrence of NHDES, NCES terminated adding bromide to landfilled wastes in approximately 2006.

As noted in our prior annual reports, low concentrations of bromide have historically been detected in the groundwater samples from the site monitoring wells, with concentrations generally ranging from approximately 0.1 to 0.4 mg/l. These concentrations are consistent with those observed in site groundwater prior to the application of bromide in Stage II, which began in 1996, and thus were historically considered to represent an overall background concentration for bromide in site groundwater (refer to wells B-102S/D and B-103S/D in Table B.2). This range of bromide concentrations provided the basis for development of background concentrations (0.4 mg/l for wells inside the GMZ; 0.1 mg/l for wells outside the GMZ).

In addition to the monitoring requirements for bromide specified in the Permit, well MW-802 was formerly required (October 2011 to April 2013) to be sampled monthly for bromide. Note that there is no AGQS or federal drinking water MCL for bromide because of its essentially benign nature at trace concentrations[3].

Locations indicating background exceedances of bromide in at least one sampling event in the current reporting year were as follows:

Outside the GMZ	B-914U (April 2020 only), B-916U (November 2019 only)
Inside the GMZ	B-102S (April 2020 only), B-304UR, B-304DR

4.1.4.4 Chloride

Locations indicating background exceedances of chloride in at least one sampling event in the current reporting year were as follows:

Outside the GMZ	MW-701, B-915U/M/D, B-916U/M/D, B-917D, B-918U/M, B-926U/L, B-927U
Inside the GMZ	B-102S, B-304UR/DR, MW-604, MW-802/803, and B-919U

As discussed above, at locations with background exceedances, chloride results were generally consistent with previous results with exceptions indicated below. These locations generally reflect three inferred processes:

1. At shallow locations near or downgradient of roadways, periodically or consistently elevated chloride (and sometimes also specific conductance) is inferred to be in part or in whole related to vehicle traffic and associated soil disturbance.

2. At intermediate and deep wells outside the GMZ generally northwest of the landfill, periodically or consistently elevated chloride (and sometimes also specific conductance) also coincides with sporadic detections of analytes (e.g., VOCs) indicating the presence of anthropogenic influence such as earthwork associated with previous phases of landfill development. These wells are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.

3. At wells within the GMZ, chloride detections are consistent with residual water quality effects related to the former unlined landfill.

[3] Published toxicological data for sodium bromide indicates that it has a toxicity comparable to sodium chloride (table salt), with published LD 50 values for both compounds in the range of 3,000 to 7,000 mg/kg body weight (ref.: U.S. National Library of Medicine/National Institute of Health "PubMed" website at: http://www.ncbi.nlm.nih.gov/pubmed/6684620

The following locations are identified because chloride concentrations are higher than recent results and/or appear to be increasing based on information collected in the current reporting period. As discussed above, five locations indicated period of record maximum chloride concentrations in July 2020:

- MW-604 indicated a period of record maximum concentration of 26 mg/l in July 2020 (previous maximum was 21 mg/l in July 2019). The concentrations of other parameters at MW-604 were consistent with recent results.

- B-304DR indicated a period of record maximum concentration of 100 mg/l in July 2020 (previous maximum was 60 mg/l in April 2020). As discussed above, elevated chloride concentrations at B-304UR and B-304DR are related to residual effects from the earthwork that was performed upgradient of these wells in summer 2019 to remove old, unused landfill infrastructure.

- B-915D indicated a period of record maximum concentration of 190 mg/l in July 2020 (previous maximum was 76 mg/l in July 2018).

- B-916M indicated a period of record maximum concentration of 110 mg/l in July 2020 (previous maximum was 96 mg/l in April 2020).

- B-917D indicated a period of record maximum concentration of 34 mg/l in July 2020 (previous maximum was 31 mg/l in September 2012). The concentrations of other parameters at B-917D were consistent with recent results.

As discussed above, the elevated chloride concentrations at "middle" and "deep" wells is inferred to represent downgradient migration of groundwater from the former MW-402LR location.

4.1.4.5 Nitrate

All nitrate results from the current reporting year were below the AGQS of 10 mg/l, in the range of not detected (<0.5 mg/l) to 6 mg/l, and were generally consistent with prior results. As indicated on Tables 1 and B.2, nitrate concentrations were generally below the background concentration (2.5 mg/l), with the following exceptions:

Outside the GMZ	B-904U (April 2020 only), B-918U
Inside the GMZ	B-304UR (November 2019 and July 2020 only)

- B-304UR, within the GMZ, indicated a concentration of 3.4 mg/l in November 2019, and 3.9 mg/l in July 2020. The nitrate concentration at B-304UR in April 2020 (2.3 mg/l) was less than the background value.

- B-904U indicated a concentration of 2.7 mg/l in April 2020, which was a period of record maximum for this location. The nitrate concentration at B-904U in July 2020 decreased to 1.8 mg/l, below background, but elevated above historical data for this location.

- B-918U indicated a concentration of 6 mg/l in April 2020, which was a period of record maximum for this location. The nitrate concentration at B-918U in July 2020 decreased to 3.2 mg/l, down from the maximum in April, but elevated above historical data for this location.

4.1.4.6 Total Kjeldahl Nitrogen (TKN)

A summary of TKN concentrations in groundwater is provided in Tables 1 and B.2. TKN concentrations were generally below the background concentration (0.92 mg/l; there is no AGQS for TKN), with the exception of two locations:

Outside the GMZ	B-926U
Inside the GMZ	MW-803

- As discussed above, B-926U (located outside the GMZ) indicated a TKN concentration of 1 mg/l in April 2020 and 1.4 mg/l in July 2020, modestly above the background value. These results were the highest concentrations recorded in its relatively short period of record (nine sampling events). Other parameters at B-926U were generally consistent with recent results, with the exception of COD (discussed above).

- MW-803 (located inside the GMZ) indicated TKN concentrations ranging from 1.1 mg/l to 1.7 mg/l, generally consistent within the range of recent concentrations.

4.2 Assessment Monitoring – MW-701 and B-918M

Consistent with the Release Detection Monitoring required by NHDES in the October 21, 2019 letter, Assessment Monitoring was performed at monitoring wells MW-701 and B-918M due to reoccurring detections of PFAS compounds at these locations. MW-701 and B-918M were sampled four times in this reporting period and VOCs (including 1,4-dioxane) and SVOCs (July event only) were not detected at these locations. Further, concentrations of other analytes at MW-701 and B-918M were within the range of previous results.

Sulfate was required by NHDES in the October 21, 2019 letter to be analyzed in the MW-701 and B-918M samples. As indicated in Exhibit 5 below, the sulfate results from MW-701 and B-918M in April 2020 were well below the GW-1/AGQS (500 mg/l). Because sulfate is not a parameter required in the Permit, a background value has not been established for this parameter.

Exhibit 5
Summary of NCES Sulfate Results

Location	Date	Sulfate
	GW-1 (AGQS)	500
	SMCL	250
MW-701	11-04-19	24
MW-701	01-07-20	34
MW-701	04-20-20	52
MW-701	07-15-20	38
B-918M	11-04-19	12
B-918M	01-07-20	12
B-918M	04-20-20	13
B-918M	07-15-20	12

Notes:
1. Concentrations are presented in milligrams per liter (mg/L) which is equivalent to parts per million.

PFAS detections at MW-701 and B-918M were discussed above, and are re-iterated below.

- **MW-701:** As indicated on the tables and charts in Appendix D, the concentrations of individual PFAS analytes in MW-701 in July 2020 were generally similar to or lower than results from the previous six PFAS sampling events at this location dating back to April 2018. PFOS, which was detected in previous events at MW-701, was not detected in April or July 2020. Although the mix of individual PFAS analytes changed throughout the reporting period, total PFAS concentrations at MW-701 decreased from November 2019 to July 2020.

- **B-918M:** As indicated on the tables and charts in Appendix D, the concentrations of individual PFAS analytes in B-918M in July 2020 were generally similar to or lower than results from the previous eight PFAS sampling events at this location dating back to July 2018. PFOS, which was sporadically detected in previous events at B-918M, was not detected in July 2020. Although the concentrations of individual PFAS analytes changed throughout the reporting period, total PFAS concentrations at B-918M decreased from November 2019 to July 2020.

PFAS concentrations at MW-701 and B-918M continue to be consistent with residual effects: historical leachate infrastructure near MW-701, which has been re-constructed, and residual impacts from the August 2006 leachate forcemain break near B-918M, subsequently addressed as part of the Stage I Phase I Landfill Capping System Repair Project, completed in September 2009.

4.3 Surface Water Results

As shown on Table B.3, VOCs were not detected in surface water in the current reporting year. Manganese was detected above the AGQS of 0.84 mg/l in one sample: S-108 (7.5 mg/l

in July 2020), which is within the range of recent concentrations detected at this location, and well below the recent July 2018 high of 26 mg/l. No other AGQS exceedances were indicated in surface water samples in the current monitoring period.

The iron and manganese results at S-1 and SF-1 in the current reporting period are consistent with the trends of generally decreasing concentrations at these locations since the 1990s (S-1) and mid-2000s (SF-1).

Iron and manganese concentrations measured in the Ammonoosuc River samples in this reporting period indicate comparable conditions in the upstream and downstream sampling locations, and do not indicate significant impact to the River's surface water quality. The iron and manganese concentrations in the Ammonoosuc River samples for July 2020 were below the respective SMCLs and AGQS.

Surface water samples were analyzed for an expanded list of metals in this reporting period; all surface water concentrations were below the respective AGQS for these metals.

As discussed above in Section 3.2, the results from the current monitoring period continue to confirm the transient nature of the chloride "pulse" that was detected at these locations in April and July 2019 related to a short-term road salt mixing operation in the Tucker pit in late 2018.

5.0 CONCLUSIONS - SUMMARY OF 2020 WATER QUALITY

NCES has continued water quality monitoring at the site under the Groundwater Monitoring Permit. As presented in prior Annual Reports, the record of water quality monitoring data developed over time at the site indicates that the landfill liner systems continue to function as designed. Residual impacts from the former unlined landfill continue to diminish, and are currently evidenced largely by the inorganic parameters; and sporadic, low-level concentrations of VOCs at three monitoring wells within the GMZ. Where identified outside the GMZ, limited groundwater impacts are inferred to be related to historical conditions that have been corrected at the site, or to limited impacts related to site operations. The water quality results do not suggest a "new" or on-going release from the facility.

As described herein, the overall results for the current year's monitoring, including the most recent July 2020 data, indicate that groundwater concentrations are generally consistent with the recent years' findings and the conceptual model of hydrogeologic conditions at the Site. Where identified, exceedances of background conditions are well understood relative to site operations and historical landfill conditions, and are not considered to represent a significant change in site conditions.

The following specific observations are noted (VOCs and PFAS in groundwater are discussed first, then inorganic parameters for groundwater, and finally surface water):

5.1 Groundwater VOCs and PFAS

VOCs (1,4-dioxane and/or DCDFM) were detected at three locations during one or more sampling events in the current reporting period. 1,4-Dioxane was detected at concentrations above the AGQS at two locations (B-304UR and B-304DR). DCDFM was detected at B-304DR only in the April 2020 event, and was not detected in the November 2019 or July 2020 events. Consistent with previous results, DCDFM was detected in B-927M in November 2019 and April 2020.

Concentrations of regulated PFAS compounds in the current reporting period were generally below AGQS values, with the exception of PFOA at six locations (B-304UR, B-304DR, MW-701, B-915U, B-918M, and B-919U) in one or more sampling events. PFOA is more frequently detected at the site than PFOS and PFNA, which were only sporadically detected during the current reporting period. PFOS, which was sporadically detected in previous events at MW-701 and B-918M at concentrations below the current AGQS, was not detected in the July 2020 sampling event. PFNA was detected only once during the current reporting period, at B-918M (November 2019) and at a concentration below the current AGQS. PFHxS was not detected at any site monitoring wells in the current reporting period.

Detections of PFAS and VOCs are only sometimes coincident. As examples, at B-304UR and B-304DR, where 1,4-dioxane concentrations have been elevated in recent sampling rounds following the nearby earthwork performed in summer 2019, the concentrations of several PFAS analytes in July 2020 were also elevated above previous events. However, at B-927M, where DCDFM has historically been detected, no regulated PFAS compounds were detected; only the unregulated PFAS analyte perfluorooctanesulfonamide (FOSA) was detected at B-927M. As indicated on Tables 1 and D.1, and summarized below, regulated PFAS compounds at the site occur in three general areas of the site and are consistent with documented historical releases in these areas:

	Wells with detections in current monitoring period				
Documented Historical Release Area	**Well**	**VOCs**	**PFOA**	**PFOS**	**PFNA**
Wells located inside the GMZ downgradient of the former unlined landfill with a history of sporadic low-level VOC detections. Low-level PFAS have also been detected at one or more locations. Results are consistent with residual impacts from the former unlined landfill. Impacts at B-304UR and B-304DR are related to residual effects from the earthwork that was performed upgradient of these wells in summer 2019 to remove old, unused landfill infrastructure.	B-304UR	1,4-dioxane (sporadic)	✓		
	B-304DR	1,4-dioxane, DCDFM (April 2020 only)	✓		
	MW-802	No	✓		
	B-919U	No	✓		

Documented Historical Release Area	Wells with detections in current monitoring period				
	Well	**VOCs**	**PFOA**	**PFOS**	**PFNA**
Well with a history of low-level DCDFM detections located proximate to the GMZ; previous results are consistent with residual impacts from the former unlined landfill and historical results from decommissioned predecessor well B-921M. FOSA (unregulated) was only PFAS detected at B-927M.	B-927M	DCDFM			
Wells located outside the GMZ proximate to the Stage I Landfill with a history of low-level PFAS detections related to historical leachate infrastructure operations corrected as part of the Leachate Management Improvement Project (LMIP), completed in May 2009. Stage I leachate infrastructure was later re-constructed as part of Stage V construction 2014-2015.	MW-701	No	✓	✓	
	B-915U	No	✓	✓	
Wells located outside the GMZ north of the Stage I Landfill with a history of low-level PFAS and 1,4-dioxane detections. Results are consistent with residual impacts from the August 2006 leachate forcemain break, subsequently addressed as part of the Stage I Phase I Landfill Capping System Repair Project, completed in September 2009.	B-918M	No	✓	✓	✓ (Nov. 2019 only)

Note:
PFHxS was not detected at any site monitoring wells in the current reporting period.
Only PFOA exceeded its AGQS in the current reporting period.

The VOC and PFAS data, together with other water quality results from the site, are not considered to be indicative of a new or on-going release from the landfill.

5.2 Groundwater Inorganic/Indicator Parameters

Where noted, exceedances of site background for indicator parameters are understood to be related to site operations or documented historical releases at the site (including the former unlined landfill), and the results do not indicate a new or ongoing release at the facility. The principal indicator parameters exceeding background are pH, temperature, specific conductance, and chloride.

As indicated in previous Annual Reports, the well locations where elevated concentrations of metals (arsenic, manganese, iron) have typically been observed are consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions, which result in elevated concentrations of these metals in groundwater.

AGQS exceedances for inorganic parameters in groundwater were limited to arsenic and manganese, and were generally recorded at wells nearby or downgradient from the former

unlined landfill, and at two locations (MW-701 and B-926U – both manganese only) west-northwest of the landfill where elevated manganese concentrations have previously been documented.

- Arsenic concentrations exceeding the AGQS (0.01 mg/l), and therefore also the site background (0.0011 mg/l) in one or more sampling events in this reporting period were recorded at seven groundwater locations inside the GMZ (B-102D, B-103S, B-103D, MW-801, MW-802, MW-803, and B-919M). There were no exceedances of the arsenic AGQS at monitoring wells outside of the GMZ. Arsenic concentrations in this reporting period were within the range of previous values.

- Manganese concentrations exceeding the AGQS (0.84 mg/l), and therefore also the site background (0.19 mg/l) in one or more sampling events in this reporting period were recorded at nine groundwater locations inside the GMZ (B-102S, B-102D, B-103S, B-103D, B-304DR, MW-801, MW-802, MW-803, and B-919M), and four locations outside the GMZ (B-904U, B-926U, B-927M, and B-927L). With limited exceptions, manganese concentrations were within the range of the prior monitoring results; concentrations at B-927M and B-927L were only slightly higher than the previous maximum concentrations at these locations.

Iron concentrations exceeding the site background (0.64 mg/l), and therefore also the SMCL (0.3 mg/l) in one or more sampling events this reporting period were recorded at nine groundwater locations inside the GMZ (B-102S, B-102D, B-103S, B-103D, MW-801, MW-802, MW-803, B-919M, and B-919D). With limited exceptions, iron concentrations were within the range of the prior monitoring results. Two wells located outside the GMZ (B-927U and B-927M) indicated background exceedances for iron, and one (B-927U) indicated a new period of record maximum concentration. Concentrations of other analytes at B-927U were within the range of recent results. A discussed in Exhibit 2, B-919D was inadvertently analyzed for total (unfiltered) iron and manganese for the first time in July 2020 and indicated a concentration higher than previous dissolved (filtered) results, which is inferred to be related to suspended sediment in the total (unfiltered) sample.

5.3 Surface Water

Surface water quality indicators and inorganic parameters were generally consistent with recent data. In this reporting period, VOCs were not detected in surface water samples.

Iron concentrations exceeding the SMCL (0.3 mg/l) were recorded at four surface water sampling locations (S-1, SF-1, S-108, and S-109); however, the iron concentrations at all the seep locations were well below historical maximum values.

Manganese concentrations were equal to or below the AGQS (0.84 mg/l) in all but one seep sample location (S-108), and were well below historical maximum values for all the seep locations.

The iron and manganese results for the current monitoring period at S-1 and SF-1 are consistent with the trends of generally decreasing concentrations at these locations since the 1990s (S-1) and mid-2000s (SF-1).

Iron and manganese concentrations measured in the Ammonoosuc River samples in 2020 monitoring indicate comparable conditions in the upstream and downstream sampling locations, and do not indicate significant impact to the River's surface water quality. The iron and manganese concentrations in the Ammonoosuc River samples for this reporting period were below the respective Secondary MCLs and AGQS.

6.0 CLOSING AND RECOMMENDATIONS

We trust that this report satisfies NHDES' requirements for the tri-annual July 2020 data transmittal, and 2020 annual summary of water quality monitoring results under the Permit. Consistent with the Permit, the next tri-annual water quality sampling event is scheduled for November 2020. Although not scheduled as part of Permit monitoring, analyses for VOCs, 1,4-dioxane, chloride, and bromide are proposed for B-304UR and B-304DR in September 2020 as part of on-going monitoring of these locations. To supplement the July 2020 sampling, B-916D will be sampled for total (unfiltered) iron and manganese in November 2020.

Should you have questions regarding the information presented herein, or wish to discuss any of our findings and conclusions as presented in this report, please feel free to contact Tim White at Sanborn Head or Joe Gay at NCES.

\\conserv1\shdata\2600s\2637.07\Source Files\2020 Annual Rpt\20200831_NCES_2020_Ann_Rpt.docx

TABLE

TABLE 1
Evaluation of Background Exceedances – Groundwater Samples – July 2020
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-007

Sample Location	Sample Date	Sample Type	SU	uS/cm	C	mg/L										ug/L		ng/L									Inferred Context for Background Exceedance										Comments
			pH	Specific Conductance	Temperature	Bromide	Chemical Oxygen Demand	Chloride	Nitrate	Total Kjeldahl Nitrogen (TKN)	Arsenic, Dissolved	Barium, Dissolved	Iron, Dissolved	Iron, Total	Manganese, Dissolved	Manganese, Total	Dichlorodifluoromethane (CFC12)	Dioxane (1,4-)	Perfluorobutanoic Acid (PFBA) [3]	Perfluoropentanoic Acid (PFPeA) [4]	Perfluorohexanoic Acid (PFHxA) [5]	Perfluoroheptanoic Acid (PFHpA) [6]	Perfluorooctanoic Acid (PFOA) [7]	Perfluorononanoic Acid (PFNA) [8]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorooctanesulfonamide (FOSA)	1	2	3	4	5	6	7	8	9	10	11	
																												pH below background downgradient of/adjacent to lined landfill; pH generally 5.2 to 6.2 s.u.	pH elevated due to grout used in monitoring well construction; grout may also result in elevated specific conductance.	Temperature above background inferred to be related to location of well downgradient of/adjacent to lined landfill area.	Periodically or consistently elevated concentrations of metals (typically, but not limited to naturally-occurring arsenic, manganese, iron) consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions.	Periodically or consistently elevated chloride (and sometimes also specific conductance) primarily at shallow locations near or downgradient of roadways inferred to be in part or in whole related to road salting/vehicle traffic and associated soil disturbance. Deeper intervals may also indicate elevated chloride concentrations within the GMZ.	Periodically or consistently elevated chloride (and sometimes also specific conductance) at intermediate and deep wells outside the GMZ, and generally northwest of the landfill. These intermediate and deep wells sporadically indicate the presence of anthropogenic influence (e.g., sporadic detection of VOCs presumed to be related to earthwork associated with previous phases of landfill development), and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.	Periodically or frequently detected COD consistent with residual water quality effects related to the former unlined landfill.	TKN consistent with residual water quality effects related to the former unlined landfill.	Shallow or intermediate well with sporadic nitrate detection; inferred to be related to hydroseeding, vegetation clearing, soil disturbance, or other site operations.	History of low-level PFAS inside the GMZ related to the presence of the former unlined landfill.	Low-level detections of extended metals list analytes (primarily barium and chromium) at locations adjacent to/downgradient of lined landfill areas; inferred to be related to naturally-occurring metals in soil with concentrations possibly increased by mineral weathering related to earthwork associated with previous phases of landfill development.	
GW-1 (AGQS)									10		0.01	2			0.84	0.84	1000	0.32					12	11		15												
SMCL			6.5 - 8.5					250					0.3	0.3	0.05	0.05																					
Background 2019-11			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-01			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-04			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-07			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.025	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background Wells																																						
B-923U	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-923U	4/21/2020	N	7.96	67.7	6.5	<0.1	<10	<1	<0.5	<0.5			<0.05		<0.005		<2	<0.25																				
B-923U	7/16/2020	N	7.61	55.55	9.1	<0.1	<10	<1	<0.5	<0.5	<0.0005	0.019	<0.05		<0.005																							
B-924U	11/5/2019	N	6.81	104.4	7.8	<0.1	<10	1	2.5	<0.5			<0.05		<0.005		<5	<0.25																				
B-924U	4/21/2020	N	Sampling not required as part of permit monitoring																																			
B-924U	7/16/2020	N	6.74	81.83	9.3																																	
B-924L	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-924L	4/21/2020	N	Sampling not required as part of permit monitoring																																			
B-924L	7/16/2020	N	*9.28*	104.9	9.1	<0.1	<10	<1	<0.5	<0.5			<0.05		0.0087		<2	<0.25																				
B-925U	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-925U	4/21/2020	N	7.51	78.3	7.1	<0.1	<10	<1	<0.5	<0.5			0.064		<0.005		<2	<0.25																				
B-925U	7/16/2020	N	7.68	70.05	9.8	<0.1	<10	<1	<0.5	<0.5	<0.0005	0.025	<0.05		<0.005				<4.46	<4.46	<4.46	<4.46	<4.46	<4.46	<4.46	<4.46	<4.46												
B-925L	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-925L	4/21/2020	N	Sampling not required as part of permit monitoring																																			
B-925L	7/16/2020	N	*8.69*	108.9	10	<0.1	<10	1.1	<0.5	<0.5			<0.05		0.022		<2	<0.25																				
Release Detection Wells Outside the GMZ																																						
MW-603	11/6/2019	N	6.79	97.52	11.1	<0.1	<10	3.9	<0.5	<0.5			*0.52*		*0.055*		<5	<0.25																				
MW-603	4/20/2020	N	6.61	100	12.8	<0.1	<10	3	<0.5	<0.5			<0.05		0.019		<2	<0.25																				
MW-603	7/15/2020	N	6.83	86.8	15.3	<0.1	<10	4.3	<0.5	<0.5			<0.05		<0.005														✓									
B-903U	11/6/2019	N	*6.31*	124.5	6.9	<0.1	<10	1.8	0.89	<0.5			<0.05		<0.005		<5	<0.25																				
B-903U	4/20/2020	N	7.06	114.9	7.8	<0.1	<10	2.2	1.3	<0.5			0.063		0.009		<2	<0.25																				
B-903U	7/16/2020	N	6.86	107.7	10.7	<0.1	<10	1.7	0.87	<0.5			<0.05		<0.005																							
B-903L	11/6/2019	N	Sampling not required as part of permit monitoring																																			
B-903L	4/20/2020	N	Sampling not required as part of permit monitoring																																			
B-903L	7/16/2020	N	7.85	97.13	10	<0.1	<10	<1	<0.5	<0.5			<0.05		0.046		<2	<0.25																				
B-904U	11/6/2019	N	6.93	79.92	10.4	<0.1	<10	1.5	<0.5	<0.5			<0.05		<0.005		<5	<0.25																				
B-904U	4/20/2020	N	*6.34*	126.8	11.1	<0.1	15	3.4	2.7	<0.5			0.28		*0.22*		<2	<0.25										✓			✓					✓		
B-904U	7/16/2020	N	7.51	94.16	13.6	<0.1	25	3	1.8	<0.5			<0.05		<0.005				<4.28	<4.28	<4.28	<4.28	<4.28	<4.28	<4.28	<4.28	<4.28			✓				✓				
B-904L	11/6/2019	N	Sampling not required as part of permit monitoring																																			
B-904L	4/20/2020	N	Sampling not required as part of permit monitoring																																			
B-904L	7/16/2020	N	7.19	95.78	11.4	<0.1	<10	1.9	<0.5	<0.5			<0.05		*0.051*		<2	<0.25																				
B-914U	11/6/2019	N	*6.47*	81.97	13.4	<0.1	<10	2.8	<0.5	<0.5	0.0008		*0.44*		0.01		<5	<0.25												✓								
B-914U	4/20/2020	N	*6*	119.3	13.8	0.15	<10	5.7	<0.5	<0.5	<0.0005		<0.05		0.0098		<2	<0.25										✓		✓								
B-914U	7/16/2020	N	*6.35*	897.4	15.8	<0.1	<10	5.1	<0.5	<0.5			*0.46*		<0.005				<4.39	<4.39	<4.39	<4.39	<4.39	<4.39	<4.39	<4.39	4.87	✓		✓									Refer to Jul. 2020 report for discussion of PFAS
B-914L	11/6/2019	N	Sampling not required as part of permit monitoring																																			
B-914L	4/20/2020	N	Sampling not required as part of permit monitoring																																			
B-914L	7/16/2020	N	7.39	130.5	14.1	<0.1	<10	3.2	<0.5	<0.5			<0.05		<0.005		<2	<0.25												✓								
B-915D	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-915D	4/21/2020	N	Sampling not required as part of permit monitoring																																			
B-915D	7/15/2020	N	8.11	678.1	10.1	<0.1	<10	190	<0.5	<0.5			<0.05		<0.005		<2	<0.25															✓					Refer to Jul. 2020 report for discussion of chloride
B-916U	11/5/2019	N	*6.26*	89.12	10	0.11	12	8.7	<0.5	<0.5			<0.05		0.014		<5	<0.25										✓				✓						
B-916U	4/21/2020	N	*5.69*	70.61	9	<0.1	<10	4.3	<0.5	<0.5			<0.05		0.01		<2	<0.25										✓										
B-916U	7/15/2020	N	*6.48*	81.81	9.9	<0.1	<10	5	<0.5	<0.5			<0.05		0.0092																							
B-916M	11/5/2019	N	*6.18*	418.1	8.5	<0.1	<10	94	<0.5	<0.5			<0.05		<0.005		<5	<0.25										✓					✓					
B-916M	4/21/2020	N	*6.22*	449.2	8.7	<0.1	<10	96	<0.5	<0.5			0.056		<0.005		<2	<0.25										✓					✓					
B-916M	7/15/2020	N	*6.25*	443.4	9.5	<0.1	<10	110	<0.5	<0.5			<0.05		<0.005													✓					✓					
B-916D	11/5/2019	N	Sampling not required as part of permit monitoring																																			
B-916D	4/21/2020	N	Sampling not required as part of permit monitoring																																			
B-916D	7/15/2020	N	*11.47*	402.4	11.6	<0.1	<10	7.6	<0.5	<0.5			0.083		<0.005		<2	<0.25											✓				✓					
B-917U	11/5/2019	N	7.04	45.51	7.4	<0.1	<10	1	<0.5	<0.5			<0.05		<0.005		<5	<0.25																				
B-917U	4/21/2020	N	*6.43*	41.89	6.4	<0.1	<10	1	<0.5	<0.5			<0.05		<0.005		<2	<0.25																				

TABLE 1
Evaluation of Background Exceedances – Groundwater Samples – July 2020
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-007

Sample Location	Sample Date	Sample Type	SU	uS/cm	C	mg/L										ug/L		ng/L									Inferred Context for Background Exceedance										Comments
			pH	Specific Conductance	Temperature	Bromide	Chemical Oxygen Demand	Chloride	Nitrate	Total Kjeldahl Nitrogen (TKN)	Arsenic, Dissolved	Barium, Dissolved	Iron, Dissolved	Iron, Total	Manganese, Dissolved	Manganese, Total	Dichlorodifluoromethane (CFC12)	Dioxane (1,4-)	Perfluorobutanoic Acid (PFBA) [3]	Perfluoropentanoic Acid (PFPeA) [4]	Perfluorohexanoic Acid (PFHxA) [5]	Perfluoroheptanoic Acid (PFHpA) [6]	Perfluorooctanoic Acid (PFOA) [7]	Perfluorononanoic Acid (PFNA) [8]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorooctanesulfonamide (FOSA)	1	2	3	4	5	6	7	8	9	10	11	
																												pH below background downgradient of/adjacent to lined landfill; pH generally 5.2 to 6.2 s.u.	pH elevated due to grout used in monitoring well construction; grout may also result in elevated specific conductance.	Temperature above background inferred to be related to location of well downgradient of/adjacent to lined landfill area.	Periodically or consistently elevated concentrations of metals (typically, but not limited to naturally-occurring arsenic, manganese, iron) consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions.	Periodically or consistently elevated chloride (and sometimes also specific conductance) primarily at shallow locations near or downgradient of roadways inferred to be in part or in whole related to road salting/vehicle traffic and associated soil disturbance. Deeper intervals may also indicate elevated chloride concentrations within the GMZ.	Periodically or consistently elevated chloride (and sometimes also specific conductance) at intermediate and deep wells outside the GMZ, and generally northwest of the landfill. These intermediate and deep wells sporadically indicate the presence of anthropogenic influence (e.g., sporadic detection of VOCs presumed to be related to earthwork associated with previous phases of landfill development), and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.	Periodically or frequently detected COD consistent with residual water quality effects related to the former unlined landfill.	TKN consistent with residual water quality effects related to the former unlined landfill.	Shallow or intermediate well with sporadic nitrate detection; inferred to be related to hydroseeding, vegetation clearing, soil disturbance, or other site operations.	History of low-level PFAS inside the GMZ related to the presence of the former unlined landfill.	Low-level detections of extended metals list analytes (primarily barium and chromium) at locations adjacent to/downgradient of lined landfill areas; inferred to be related to naturally-occurring metals in soil with concentrations possibly increased by mineral weathering related to earthwork associated with previous phases of landfill development.	
GW-1 (AGQS)									10		0.01	2			0.84	0.84	1000	0.32					12	11		15													
SMCL			6.5 - 8.5					250					0.3	0.3	0.05	0.05																					
Background 2019-11			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-01			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-04			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-07			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.025	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
B-917U	7/15/2020	N	7	39.04	7.5	<0.1	<10	<1	<0.5	<0.5			<0.05		<0.005																							
B-909	11/5/2019	N	7.23	51.3	8.7	<0.1	<10	1.1	<0.5	0.54			0.24		<0.005		<5	<0.25																			
B-909	4/21/2020	N	*6.27*	83.18	7.3	<0.1	<10	<1	<0.5	<0.5			0.13		<0.005		<2	<0.25									✓										
B-909	7/15/2020	N	6.67	70.79	8.6	<0.1	<10	1.1	<0.5	<0.5			<0.05		<0.005																						
B-917D	11/5/2019	N	Sampling not required as part of permit monitoring																																		
B-917D	4/21/2020	N	Sampling not required as part of permit monitoring																																		
B-917D	7/15/2020	N	*6.46*	203.1	9.8	<0.1	<10	34	<0.5	<0.5			0.097		<0.005		<2	<0.25																			
B-918U	11/4/2019	N	*6.25*	143.1	9.3	<0.1	<10	14	0.86	<0.5			<0.05		<0.005		<5	<0.25									✓				✓						
B-918U	4/20/2020	N	*6.47*	181.3	8.8	<0.1	<10	22	6	<0.5			*0.36*		0.013		<2	<0.25													✓				✓		
B-918U	7/15/2020	N	*6.26*	413.4	9.9	<0.1	<10	21	3.2	<0.5			<0.05		<0.005				<4.47	<4.47	<4.47	<4.47	<4.47	<4.47	<4.47	<4.47	<4.47	✓				✓				✓		
B-918D	11/4/2019	N	Sampling not required as part of permit monitoring																																		
B-918D	4/20/2020	N	Sampling not required as part of permit monitoring																																		
B-918D	7/15/2020	N	6.88	132.1	10.4	<0.1	<10	4.7	<0.5	<0.5			<0.05		<0.005		<2	<0.25																			
B-926U	11/5/2019	N	*6.06*	191.9	8.8	<0.1	17	31	<0.5	<0.5			0.1		***2.2***		<5	<0.25									✓			✓	✓						
B-926U	4/21/2020	N	*5.96*	178.5	8	<0.1	28	24	<0.5	1			0.065		***2.2***		<2	<0.25									✓			✓	✓						
B-926U	7/15/2020	N	6.51	185.6	10.5	<0.1	48	18	<0.5	1.4			0.14		***2.7***															✓	✓						
B-926L	11/5/2019	N	*6.24*	321.3	8.3	<0.1	<10	61	<0.5	<0.5			<0.05		<0.005		<5	<0.25									✓					✓					
B-926L	4/21/2020	N	6.63	308.6	8.4	<0.1	<10	58	<0.5	<0.5			<0.05		<0.005		<2	<0.25														✓					
B-926L	7/15/2020	N	6.52	301.1	9.5	<0.1	<10	60	<0.5	<0.5			<0.05		<0.005																	✓					
B-927U	11/4/2019	N	*6.25*	351	10.7	<0.1	<10	50	2.4	<0.5			<0.05		0.0065		<5	<0.25									✓				✓						
B-927U	4/20/2020	N	*6.08*	481.6	11.9	<0.1	<10	63	2.5	<0.5			<0.05		0.0087		<2	<0.25									✓				✓						
B-927U	7/13/2020	N	*6.35*	331.8	18	<0.1	<10	60	1.9	<0.5			*0.73*		0.027												✓		✓		✓						Refer to Jul. 2020 report for discussion of iron.
B-927L	11/4/2019	N	Sampling not required as part of permit monitoring																																		
B-927L	4/20/2020	N	Sampling not required as part of permit monitoring																																		
B-927L	7/13/2020	N	7.28	92.12	14.4	<0.1	19	1.2	<0.5	<0.5			0.053		*0.25*		<2	<0.25											✓	✓								
***B-927M*:** *Well with a history of low-level DCDFM detections located proximate to the GMZ; previous results are consistent with residual impacts from the former unlined landfill and historical results from decommissioned predecessor well B-921M.*																																					
B-927M	11/4/2019	N	6.83	101.9	14.4	<0.5	58	5.3	<3	<0.5			*2.4*		*0.2*		8	<0.25											✓	✓			✓					
B-927M	4/20/2020	N	6.95	113.8	14.3	<0.1	54	3.2	<0.5	<0.5			*3.2*		*0.21*		21	<0.25											✓	✓			✓					
B-927M	7/13/2020	N	6.92	91.45	22.8	<0.1	79	3.4	<0.5	<0.5			*2.4*		*0.23*				<4	<4	<4	<4	<4	<4	<4	<4	11.2 JL			✓	✓			✓					Refer to Jul. 2020 report for discussion of PFAS
***B-918M*:** *Well located outside the GMZ north of the Stage I Landfill with a history of low-level PFAS and 1,4-dioxane detections. Results are consistent with residual impacts from the August 2006 leachate forcemain break, subsequently addressed as part of the Stage I Phase I Landfill Capping System Repair Project, completed in September 2009.*																																					
B-918M	11/4/2019	N	6.74	225.1	9.2	<0.1	<10	15	<0.5	<0.5			<0.05		0.021		<5	<0.25	8.15	13.5	16.8	9.71	**28.4**	5.7	<4.37	5.23						✓						
B-918M	1/7/2020	N	7.31	211	7.6	<0.1	<10	14	<0.5	<0.5			<0.05		0.019		<5	<0.25	4.9	7.6	11.2	<4.22	**14.3**	<4.22	<4.22	5.14						✓						
B-918M	4/20/2020	N	6.74	199	9.3	<0.1	<10	12	<0.5	<0.5			<0.05		0.017		<2	<0.25	<4.35	4.71	7.02	<4.35	9.55	<4.35	<4.35	4.42						✓						
B-918M	7/15/2020	N	6.83	182.3	10.6	<0.1	<10	12	<0.5	<0.5			<0.05		0.021		<2	<0.25	<4.47	6.09	7.18	<4.47	8.72	<4.47	<4.47	<4.47	<4.47						✓						
B-918M	7/15/2020	FD																	<4.34	5.53	6.51	<4.34	9.24	<4.34	<4.34	<4.34	<4.34											
***MW-701/B-915U/B-915M*:** *Well located outside the GMZ proximate to the Stage I Landfill with a history of low-level PFAS detections related to historical leachate infrastructure operations corrected as part of the Leachate Management Improvement Project (LMIP), completed in May 2009. Stage I leachate infrastructure was later re-constructed as part of Stage V construction 2014-15.*																																					
MW-701	11/4/2019	N	*6.46*	259.3	10.5	<0.1	17	15	<0.5	<0.5			<0.05		*0.16*		<5	<0.25	11.1	20.1	21.7	6.1	**16.4**	<4.52	4.65	6.65						✓						
MW-701	1/7/2020	N	7.28	401.9	7	<0.1	<10	14	<0.5	<0.5			0.11		*0.59*		<5	<0.25	8.44	14.2	23	5.56	**14.7**	<4.62	<4.62	7.18					✓	✓						
MW-701	4/20/2020	N	6.57	349.8	7.1	<0.1	14	33	2.5	<0.5			0.1		*0.65*		<2	<0.25	7.21	13.7	19.2	6.19	**12.7**	<4.43	5.86	<4.43					✓	✓						
MW-701	7/15/2020	N	6.83	255.8	10.7	<0.1	16	16	2.1	<0.5			<0.05		*0.18*		<2	<0.25	7.36	13.0	12.9	7.14	11.5	<4.41	<4.41	<4.41	5.95					✓						Refer to Jul. 2020 report for discussion of PFAS
B-915U	11/5/2019	N	6.6	329.4	9.2	<0.1	<10	52	<0.5	<0.5			<0.05		0.0078		<5	<0.25														✓					
B-915U	4/21/2020	N	*6.26*	240.9	8.6	<0.1	<10	20	<0.5	<0.5			0.071		0.0054		<2	<0.25									✓					✓					
B-915U	7/15/2020	N	*8.57*	218.1	10.3	<0.1	<10	18	<0.5	<0.5			0.18		0.011				8.94	16.3	17.7	5.48	**14.5**	<4.41	<4.41	5.29	6.12					✓						Refer to Jul. 2020 report for discussion of PFAS
B-915M	11/5/2019	N	*6.09*	192.2	8.7	<0.1	<10	77	<0.5	<0.5			<0.05		<0.005		<5	<0.25									✓					✓					
B-915M	4/21/2020	N	*6.12*	341.3	8.5	<0.1	<10	71	<0.5	<0.5			0.12		<0.005		<2	<0.25									✓					✓					
B-915M	7/15/2020	N	6.83	326.8	10.7	<0.1	<10	78	<0.5	<0.5			<0.05		<0.005				<4.43	<4.43	<4.43	<4.43	<4.43	<4.43	<4.43	<4.43	5.43					✓						Refer to Jul. 2020 report for discussion of PFAS
Release Detection Wells Inside the GMZ – Impacts Anticipated from Former Unlined Landfill																																					
B-919D	11/4/2019	N	Sampling not required as part of permit monitoring																																		
B-919D	4/20/2020	N	Sampling not required as part of permit monitoring																																		
B-919D	7/13/2020	N	6.84	84.6	16.8	<0.1	<10	2.2	<0.5	<0.5			*0.83*		0.047		<2	<0.25											✓									Refer to Jul. 2020 report for discussion of iron.

TABLE 1
Evaluation of Background Exceedances – Groundwater Samples – July 2020
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-007

Sample Location	Sample Date	Sample Type	SU	uS/cm	C	mg/L										ug/L		ng/L									Inferred Context for Background Exceedance											Comments
			pH	Specific Conductance	Temperature	Bromide	Chemical Oxygen Demand	Chloride	Nitrate	Total Kjeldahl Nitrogen (TKN)	Arsenic, Dissolved	Barium, Dissolved	Iron, Dissolved	Iron, Total	Manganese, Dissolved	Manganese, Total	Dichlorodifluoromethane (CFC12)	Dioxane (1,4-)	Perfluorobutanoic Acid (PFBA) [3]	Perfluoropentanoic Acid (PFPeA) [4]	Perfluorohexanoic Acid (PFHxA) [5]	Perfluoroheptanoic Acid (PFHpA) [6]	Perfluorooctanoic Acid (PFOA) [7]	Perfluorononanoic Acid (PFNA) [8]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorooctanesulfonamide (FOSA)	1	2	3	4	5	6	7	8	9	10	11	
																												pH below background downgradient of/adjacent to lined landfill; pH generally 5.2 to 6.2 s.u.	pH elevated due to grout used in monitoring well construction; grout may also result in elevated specific conductance.	Temperature above background inferred to be related to location of well downgradient of/adjacent to lined landfill area.	Periodically or consistently elevated concentrations of metals (typically, but not limited to naturally-occurring arsenic, manganese, iron) consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions.	Periodically or consistently elevated chloride (and sometimes also specific conductance) primarily at shallow locations near or downgradient of roadways inferred to be in part or in whole related to road salting/vehicle traffic and associated soil disturbance. Deeper intervals may also indicate elevated chloride concentrations within the GMZ.	Periodically or consistently elevated chloride (and sometimes also specific conductance) at intermediate and deep wells outside the GMZ, and generally northwest of the landfill. These intermediate and deep wells sporadically indicate the presence of anthropogenic influence (e.g., sporadic detection of VOCs presumed to be related to earthwork associated with previous phases of landfill development), and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.	Periodically or frequently detected COD consistent with residual water quality effects related to the former unlined landfill.	TKN consistent with residual water quality effects related to the former unlined landfill.	Shallow or intermediate well with sporadic nitrate detection; inferred to be related to hydroseeding, vegetation clearing, soil disturbance, or other site operations.	History of low-level PFAS inside the GMZ related to the presence of the former unlined landfill.	Low-level detections of extended metals list analytes (primarily barium and chromium) at locations adjacent to/downgradient of lined landfill areas; inferred to be related to naturally-occurring metals in soil with concentrations possibly increased by mineral weathering related to earthwork associated with previous phases of landfill development.	
GW-1 (AGQS)									10		0.01	2			0.84	0.84	1000	0.32					12	11		15												
SMCL			6.5 - 8.5					250					0.3	0.3	0.05	0.05																						
Background 2019-11			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-01			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-04			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0													
Background 2020-07			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.025	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
MW-801/MW-802/MW-803/B-919U/B-919M: *Well located in the GMZ downgradient of the former unlined landfill with a history of sporadic low-level VOC detections. Low-level PFAS has also been detected at one or more locations. Results are consistent with residual impacts from the former unlined landfill.*																																						
MW-801	11/6/2019	N	7.11	101.5	11.4	<0.1	19	2.8	<0.5	<0.5	**0.012**		*5.6*		***3.7***		<5	<0.25												✓										
MW-801	4/20/2020	N	*6.35*	132	11.6	<0.1	<10	2.4	<0.5	<0.5	**0.013**		*5.1*		***3.5***		<2	<0.25											✓		✓										
MW-801	7/15/2020	N	6.92	124.8	14.8	<0.1	<10	4.3	<0.5	<0.5			*8.1*		***5.3***															✓	✓									
MW-802	11/5/2019	N	*6.23*	318.8	14.5	0.15	57	17	<0.5	0.68	**0.03**		*23*		***4***		<5	<0.25											✓		✓	✓			✓					
MW-802	4/20/2020	N	*6.27*	347	17.6	0.21	39	18	<0.5	0.78	**0.033**		*24*		***4.5***		<2	<0.25											✓		✓	✓	✓		✓					
MW-802	7/15/2020	N	*6.36*	278.3	19.9	0.12	27	13	<0.5	0.52			*25*		***5.3***				6.13	11.4	14.2	6.77	10.3	<4.81	<4.81	<4.81	9.31	✓		✓	✓	✓		✓			✓		Refer to Jul. 2020 report for discussion of PFAS
MW-803	11/5/2019	N	*6.31*	499.5	14.8	0.16	39	36	<0.5	1.6	**0.074**		*62*		***6.7***		<5	<0.25												✓	✓				✓	✓			
MW-803	11/5/2019	FD				0.15	38	40	<0.5	1.1	**0.074**		*65*		***6.9***		<5	<0.25													✓				✓	✓			
MW-803	4/20/2020	N	*6.35*	583.8	18	0.25	70	32	<0.5	1.7	**0.077**		*78*		***12***		<2	<0.25											✓		✓	✓	✓		✓	✓			
MW-803	4/20/2020	FD				0.23	67	30	<0.5	1.7	**0.077**		*77*		***12***		<2	<0.25													✓				✓	✓			
MW-803	7/15/2020	N	*6.34*	519.2	20	0.28	69	24	<0.5	1.6			*74*		***9.2***														✓		✓	✓	✓		✓	✓			
MW-803	7/15/2020	FD				0.21	71	23	<0.5	1.7			*75*		***9.1***																✓		✓		✓	✓			
B-919U	11/4/2019	N	*6.47*	164.5	11	<0.1	<10	20	<0.5	<0.5	<0.0005		<0.05		<0.005		<5	<0.25														✓							
B-919U	4/20/2020	N	*6*	335.5	11.5	<0.1	<10	15	0.71	<0.5	<0.0005		<0.05		<0.005		<2	<0.25											✓			✓							
B-919U	7/13/2020	N	*6.41*	174.2	18.9	<0.1	<10	13	<0.5	<0.5			<0.05		<0.005				6.51	9.14	10.4	<4.38	**25.4**	<4.38	<4.38	<4.38	<4.38			✓		✓					✓			
B-919M	11/5/2019	N	7	210.8	14.5	<0.1	<10	2.5	<0.5	<0.5	**0.013**		*0.47*		***2.9***		<5	<0.25												✓	✓								
B-919M	4/20/2020	N	6.97	210.9	15.7	<0.1	<10	3.1	<0.5	<0.5	0.0076		0.14		***0.78***		<2	<0.25												✓	✓								
B-919M	7/13/2020	N				<0.1	<10	2.9	<0.5	<0.5			*2.5*		***3.5***																✓								
B-919M	7/15/2020	N	6.87	159.9	18.5														<4.29	<4.29	<4.29	<4.29	<4.29	<4.29	<4.29	<4.29	<4.29			✓									
B-304UR/B-304DR: *Wells located in the GMZ downgradient of the former unlined landfill with a history of periodic low-level 1,4-dioxane detections and periodic elevated (above GMZ background) bromide and chloride detections; Results are consistent with residual water quality effects related to the former unlined landfill and earthwork that was performed upgradient of these wells in summer 2019 to remove old, unused landfill infrastructure.*																																						
B-304UR	11/4/2019	N	*6.1*	823.2	10.8	1.5	15	200	3.4	<0.5			<0.05		0.011		<5	**5.4**										✓				✓					✓			
B-304UR	11/22/2019	N	*6.28*	1103	11.3	1.7		220										**6.9**										✓				✓							
B-304UR	4/21/2020	N	*6.26*	309.3	10.5	<0.1	<10	33	2.3	<0.5			0.15		0.0095		<2	<0.25										✓				✓							
B-304UR	7/13/2020	N	*6.07*	758.1	17	0.74	11	110	3.9	<0.5			<0.05		0.016		<2	**1.7**	56.0	32.3	55.5	18.1	**22.7**	<4.29	37.2	<4.29	6.44	✓				✓					✓	✓		Refer to Jul. 2020 report for discussion of PFAS
B-304DR	11/4/2019	N	*6.38*	404.9	11.5	0.24	<10	52	<0.5	<0.5			<0.05		***2.7***		<5	**1**													✓	✓							
B-304DR	11/22/2019	N	6.75	391	12.4	0.28		54										**1.4**													✓	✓							
B-304DR	4/21/2020	N	*6.42*	423.9	12.7	0.33	<10	60	<0.5	<0.5			0.068		***3.2***		4.3	**1.1**													✓	✓							
B-304DR	4/21/2020	FD				0.36	<10	57	<0.5	<0.5			0.14		***3.1***		4.5	**1.3**													✓	✓							
B-304DR	7/13/2020	N	*6.45*	509.5	16	0.65	<10	100	0.69	<0.5			<0.05		***4.6***		<2	**2.9**	85.4	62.1	102	20.0	**24.8**	<4.41	73.8	<4.41	<4.41					✓	✓					✓		Refer to Jul. 2020 report for discussion of bromide.
Groundwater Management Wells Inside the GMZ – Impacts Anticipated from Former Unlined Landfill																																						
B-102S	11/6/2019	N	*6.24*	119.3	12.2	<0.1	<10	8.9	<0.5	<0.5			*0.31*		***1.1***		<5	<0.25										✓			✓	✓							
B-102S	4/20/2020	N	*6.19*	138.7	11.5	0.9	<10	11	1.6	<0.5			0.12		***0.58***		<2	<0.25										✓			✓	✓							
B-102S	7/16/2020	N	*6.39*	133.8	14.8	<0.1	<10	7.4	<0.5	<0.5	<0.0005	0.1	0.26		***0.7***		<2	<0.25										✓		✓	✓	✓						✓	
B-102D	11/6/2019	N	6.71	101.8	12	<0.1	<10	2.1	<0.5	<0.5			*9*		***1.1***		<5	<0.25													✓								
B-102D	4/20/2020	N	6.9	106.6	12.6	<0.1	<10	1.7	<0.5	<0.5			*9.4*		***1.3***		<2	<0.25													✓								
B-102D	7/16/2020	N	6.92	102.7	15	<0.1	<10	1.9	<0.5	<0.5	**0.062**	0.02	*10*		***1.4***		<2	<0.25													✓	✓							
B-103S	11/5/2019	N	6.94	134.3	12.5	<0.1	<10	4.9	<0.5	0.69			*8.8*		***1.8***		<5	<0.25													✓								
B-103S	11/5/2019	FD				<0.1	<10	4.6	<0.5	<0.5			*8.8*		***1.7***		<5	<0.25													✓								
B-103S	4/21/2020	N	*6.48*	142	11.3	<0.1	<10	4.1	<0.5	<0.5			*8.2*		***1.6***		<2	<0.25													✓								
B-103S	7/15/2020	N	6.93	111.4	16.1	<0.1	<10	3.5	<0.5	<0.5	**0.036**	0.008	*7.6*		***1.8***		<2	<0.25													✓	✓							
B-103S	7/15/2020	FD				<0.1	<10	3.4	<0.5	<0.5	**0.036**	0.0085	*7.4*		***1.8***		<2	<0.25													✓								
B-103D	11/5/2019	N	6.88	100.5	12.3	<0.1	<10	2.8	<0.5	0.51			*3.9*		***1***		<5	<0.25													✓								
B-103D	4/21/2020	N	6.74	105.3	13	<0.1	<10	2.8	<0.5	0.51			*1.6*		***0.94***		<2	<0.25													✓	✓							
B-103D	7/15/2020	N	6.76	95.87	16.5	<0.1	<10	2.3	<0.5	<0.5	**0.041**	0.0058	*3.9*		***1.2***		<2	<0.25													✓	✓							
MW-604	11/6/2019	N	Sampling not required as part of permit monitoring																																			
MW-604	4/21/2020	N	Sampling not required as part of permit monitoring																																			
MW-604	7/13/2020	N	6.91	239.6	14.8	<0.1	14	26	<0.5	<0.5			<0.05		0.0086		<2	<0.25													✓								

TABLE 1
Evaluation of Background Exceedances – Groundwater Samples – July 2020
North Country Environmental Services, Inc.
Bethlehem, New Hampshire
Permit No. GWP-198704033-B-007

Sample Location	Sample Date	Sample Type	SU	uS/cm	C	mg/L										ug/L		ng/L									Inferred Context for Background Exceedance										Comments
			pH	Specific Conductance	Temperature	Bromide	Chemical Oxygen Demand	Chloride	Nitrate	Total Kjeldahl Nitrogen (TKN)	Arsenic, Dissolved	Barium, Dissolved	Iron, Dissolved	Iron, Total	Manganese, Dissolved	Manganese, Total	Dichlorodifluoromethane (CFC12)	Dioxane (1,4-)	Perfluorobutanoic Acid (PFBA) [3]	Perfluoropentanoic Acid (PFPeA) [4]	Perfluorohexanoic Acid (PFHxA) [5]	Perfluoroheptanoic Acid (PFHpA) [6]	Perfluorooctanoic Acid (PFOA) [7]	Perfluorononanoic Acid (PFNA) [8]	Perfluorobutanesulfonic Acid (PFBS) [4S]	Perfluorooctanesulfonic Acid (PFOS) [8S]	Perfluorooctanesulfonamide (FOSA)	1	2	3	4	5	6	7	8	9	10	11	
																												pH below background downgradient of/adjacent to lined landfill; pH generally 5.2 to 6.2 s.u.	pH elevated due to grout used in monitoring well construction; grout may also result in elevated specific conductance.	Temperature above background inferred to be related to location of well downgradient of/adjacent to lined landfill area.	Periodically or consistently elevated concentrations of metals (typically, but not limited to naturally-occurring arsenic, manganese, iron) consistent with residual water quality effects related to the former unlined landfill, principally chemically-reducing conditions.	Periodically or consistently elevated chloride (and sometimes also specific conductance) primarily at shallow locations near or downgradient of roadways inferred to be in part or in whole related to road salting/vehicle traffic and associated soil disturbance. Deeper intervals may also indicate elevated chloride concentrations within the GMZ.	Periodically or consistently elevated chloride (and sometimes also specific conductance) at intermediate and deep wells outside the GMZ, and generally northwest of the landfill. These intermediate and deep wells sporadically indicate the presence of anthropogenic influence (e.g., sporadic detection of VOCs presumed to be related to earthwork associated with previous phases of landfill development), and are inferred to be completed in groundwater intervals representative of longer flow paths/travel times. As such, results from these monitoring wells are inferred to be representative of historical conditions which may no longer exist at the site.	Periodically or frequently detected COD consistent with residual water quality effects related to the former unlined landfill.	TKN consistent with residual water quality effects related to the former unlined landfill.	Shallow or intermediate well with sporadic nitrate detection; inferred to be related to hydroseeding, vegetation clearing, soil disturbance, or other site operations.	History of low-level PFAS inside the GMZ related to the presence of the former unlined landfill.	Low-level detections of extended metals list analytes (primarily barium and chromium) at locations adjacent to/downgradient of lined landfill areas; inferred to be related to naturally-occurring metals in soil with concentrations possibly increased by mineral weathering related to earthwork associated with previous phases of landfill development.	
GW-1 (AGQS)									10		0.01	2			0.84	0.84	1000	0.32					12	11		15											
SMCL			6.5 - 8.5					250					0.3	0.3	0.05	0.05																					
Background 2019-11			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-01			6.3 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-04			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.015	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0												
Background 2020-07			6.4 - 9.5	253	6.2-12.9	0.1, 0.4 §	24	7	2.5	0.92	0.0011	0.025	0.64	0.64	0.19	0.19	5	0.25	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0	<4.0-<5.0											

Notes:
1. Samples were collected by Sanborn Head on the dates indicated. Samples were analyzed by Eastern Analytical, Inc. (EAI) of Concord, New Hampshire.
Field duplicate samples are indicated by "FD" in the Sample Type column.

2. Only detected analytes which exceed background in one or more sample in the current rounds are presented herein. Blank cells for an analyte indicate not analyzed. Refer to the analytical laboratory reports for the complete list of parameters analyzed. Results are compared to their respective background values from time of sampling.

3. pH is presented in standard units (s.u.), specific conductance is presented in microSiemens per centimeter (µS/cm), and temperature is presented in degrees Celsius (C). Indicator parameter and metals results are presented in milligrams per liter (mg/L) which is equivalent to parts per million. Volatile organic compound (VOC) results are presented in micrograms per liter (µg/L) which is equivalent to parts per billion (ppb).

4. "§" indicates background value for bromide is 0.4 mg/L for wells within the groundwater management zone (GMZ) established for the site, and 0.1 mg/L for wells outside the GMZ.
"<" indicates the analyte was not detected above the listed laboratory reporting limit.
"JL" indicates the result is estimated with potential low bias due to low labeled internal standard recoveries (<10%).
Blank cells indicate the sample was not analyzed for that analyte.
[3] = number of carbons in the alkyl chain for perfluorinated carboxylic acids (PFCAs). The carbon included in the carboxylic functional group is non-fluorinated and the remaining carbons (i.e., alkyl chain) are fluorinated.
[4S] = number of carbons in the alkyl chain for perfluorinated sulfonic acids (PFSAs). All of the carbons are fluorinated.

5. With the signing of HB1264 into law on July 23, 2020, the State of New Hampshire established Maximum Contaminant Levels (MCLs) for four PFAS compounds: PFOA (12 ng/l), PFOS (15 ng/l), PFHxS (18 ng/l), and PFNA (11 ng/l). The establishment of the PFAS MCLs also established equivalent Ambient Groundwater Quality Standards (AGQSs) for these analytes.

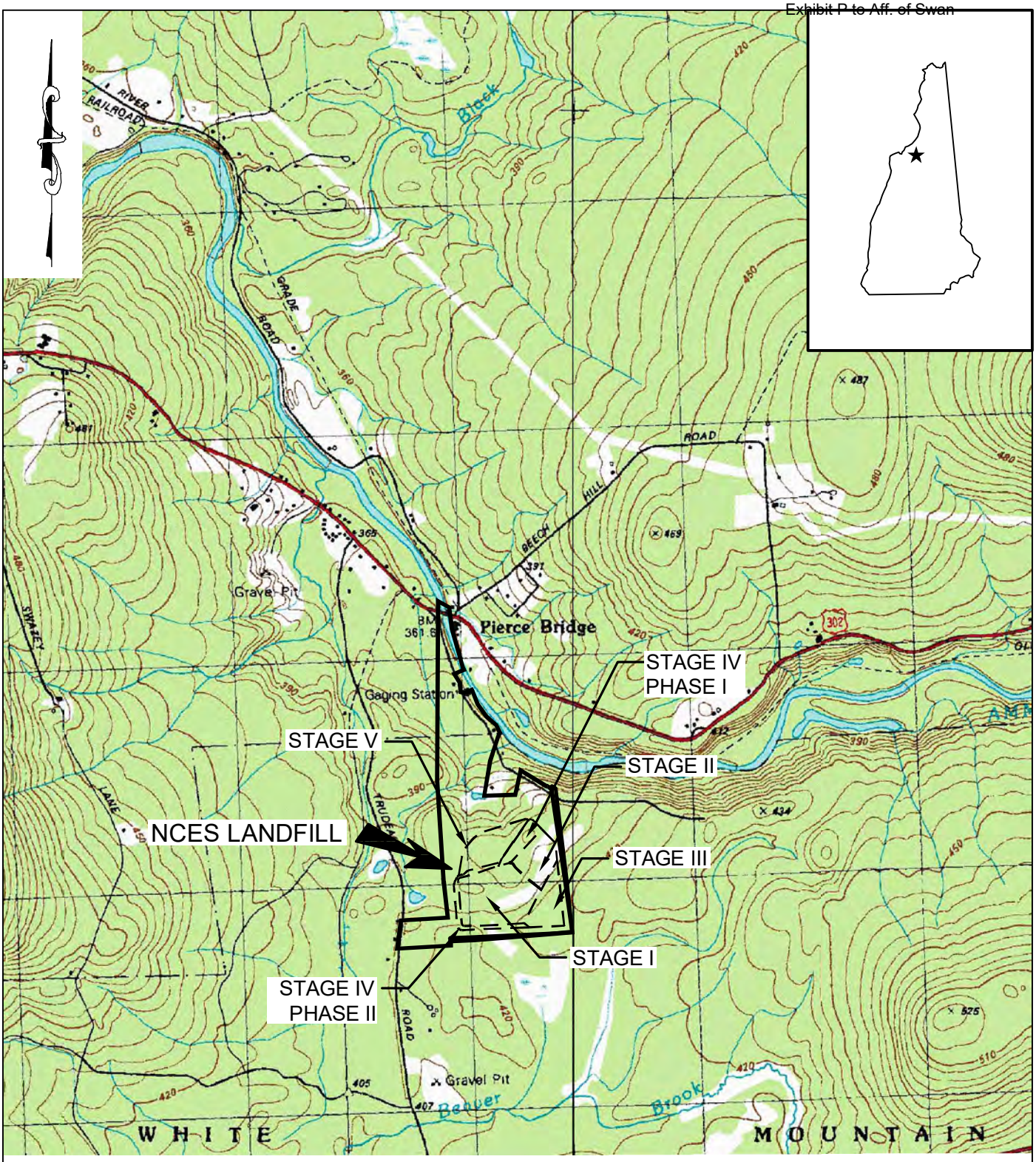
"GW-1" Groundwater Standards are from the New Hampshire Department of Environmental Services (NHDES) Contaminated Sites Risk Characterization and Management Policy (RCMP) (January 1998, with 2000 through 2018 revisions/addenda). GW-1 Groundwater Standards are intended to be equivalent to the AGQSs promulgated in Env-Or 600 (June 2015 with October 2016, September 2018, September 2019, and May 2020 amendments). For analytes where GW-1 and AGQS values differ, the values presented in this table reflect the AGQSs in the latest Env-Or 600 update. The AGQS/GW-1 Groundwater Standards are intended to be protective of groundwater as a source of drinking water.

"SMCL" refers to the USEPA Secondary Maximum Contaminant Levels as presented in the National Primary Drinking Water Standards (May 2009). The SMCLs are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These analytes are not considered to present a risk to human health at the SMCL.

6. **Bold** values exceed the GW-1/AGQS.
Italic values exceed the SMCL.
Green shading indicates a concentration exceeding background.
Yellow shading indicates a concentration exceeding background for the first time.

7. Refer to the report text and the text of Appendix A for further information about calculation and selection of background concentrations.

FIGURES



NOTES:

BASE MAP TAKEN FROM 7.5 MINUTE
USGS QUADRANGLE MAP:
BETHLEHEM, NEW HAMPSHIRE

NORTH COUNTRY ENVIRONMENTAL SERVICES INC. BETHLEHEM, NEW HAMPSHIRE	ANNUAL GROUNDWATER MONITORING REPORT LOCUS PLAN		
SANBORN HEAD	SCALE: 1"=2000'	DRAWN BY: EMW	FILE NO. 2637.07
	DATE: AUG 2020	CHECKED BY: TMW	FIGURE NO. 1

File:P:\2600s\2637.07\Graphics Files\CAD\Annual Rpt\AnnRptFigures_2020.dwg Plot Date: 8-12-20

NOTES:

1. TOPOGRAPHY AND SITE FEATURES SHOWN ARE BASED ON AERIAL PHOTOGRAMMETRY PERFORMED BY AERIAL SURVEY & PHOTO, INC. IN JUNE 2019, WITH UPDATES IN THE ACTIVE AREA PERFORMED IN JANUARY 2020, AND WAS PROVIDED TO SANBORN HEAD BY CMA ENGINEERS ON FEBRUARY 2, 2020 IN AN AUTOCAD FILE TITLED, "665-NCES EXISTING TOPO.DWG".

2. THE LIMITS OF THE GMZ ARE BASED ON AN OCTOBER 2017 PLAN PREPARED BY HORIZONS ENGINEERING, INC. ENTITLED "GROUND WATER MANAGEMENT ZONE PLAN FOR LANDS OF NORTH COUNTRY ENVIRONMENTAL SERVICES, INC. AND FOREST ACQUISITIONS, INC."

LEGEND:

- FACILITY MONITORING WELL
- SURFACE WATER SAMPLING LOCATION
- U/S — INDICATES UPPER/SHALLOW WELL
- M — INDICATES SCREEN AT MIDDLE INTERVAL BETWEEN UPPER AND LOWER SCREENS
- D/L — INDICATES DEEP/LOWER WELL
- R — INDICATES REPLACEMENT WELL
- RIP-RAP STONE
- LIMIT OF WETLAND DELINEATION
- GROUNDWATER MANAGEMENT ZONE
- TOWN OF BETHLEHEM ZONING LINE
- PROPERTY LINE

AR-3
TIE COURSE S 70°46'29" E 844.45'
FLOW
AMMONOOSUC RIVER
AR-2
AR-1
SF-1
S-109
S-108
S-101
S-1
(MAIN SEEP)
MUCHMORE ROAD
OUTFALL 2
B-304UR
B-304DR
MW-604
LAUREL LANE
LIMIT OF WETLANDS DELINEATED BY B.H. KEITH ASSOCIATES IN APRIL 1999
STORMWATER POND 4
B-919M
B-919U
B-919D
B-927M
B-927U
B-927L
B-909
B-917D
B-917U
B-918D
B-918U
B-918M
OUTFALL 1
B-916U
B-916M
B-916D
MW-803
MW-802
STAGE IV
PHASE I
TOWN DISTRICT II
TOWN DISTRICT V
STORMWATER POND 5
B-915M
B-915U
B-915D
STAGE V
PHASE I
PHASE II
B-103S
B-103D
MW-801
B-102S
B-102D
B-914L
B-914U
B-926L
B-926U
STORMWWATER POND 6
STAGE II
PHASE I
MW-603
MW-701
APPROXIMATE EXTENT OF FORMER UNLINED LANDFILL
STAGE I
PHASE I
B-904U/L
STAGE IV
PHASE II
PHASE III
PHASE II
STAGE III
PHASE IV
B-903U/L
B-925U
B-925L
B-924U
B-924L
B-923U

SANBORN HEAD	GRAPHICAL SCALE 100' 50' 0 100' 200'	DRAWN BY: E. WRIGHT DESIGNED BY: T. WHITE REVIEWED BY: C. CROCETTI PROJECT MGR: T. WHITE PIC: C. CROCETTI DATE: AUGUST 2020	NORTH COUNTRY ENVIRONMENTAL SERVICES, INC. BETHLEHEM, NEW HAMPSHIRE SITE FEATURES PLAN

PROJECT NUMBER: 2637.07

FIGURE NUMBER: 2

WAITE HEINDEL
Environmental Management

August 15, 2021

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

Re: May 2021 Water Quality Sampling, and
Analysis of Trends and Standards Exceedances
NEWSVT Landfills
Coventry, Vermont

Dear Joe:

Enclosed please find the results of the May 2021 water quality sampling round conducted at the NEWSVT Landfills in Coventry, Vermont in accordance with Conditions 67, 68, 69, 70 and 71 of the issued *Solid Waste Management Facility Certification* ("Solid Waste Cert.", effective October 12, 2018).

Sampling was conducted by Wendy Shellito, Waite-Heindel Environmental Management (WHEM) Project Scientist; Sam Cowan, WHEM Geologist; Miles Waite, Senior Hydrogeologist; and Hannah Weiss, Staff Technician. Groundwater, surface water and underdrain samples were collected from 5/3/21 through 5/11/21, and leachate samples were collected on 5/18/21.

Between the previous sampling event in October 2020 and this current May 2021 sampling event, solid waste was being placed in available slope-side airspaces across Phase 1, Phase II and Phase IV. Leachate from these cells drains to the individual sumps located in Phase I, Phase II and Phase IV Cells 1, 2, and 3+4.

Refer to the map of water quality sampling locations on page 2 of Appendix 1.

Reporting of results is in accordance with Condition 83 of the Solid Waste Cert. Excel files of groundwater quality and statistical evaluations will be provided separately.

Method(s) of Reporting Trends in Water Quality Data: This report describes recent trends in the water quality results. Trends are stated for the four broad categories of indicator parameters, inorganics [including metals], volatile organics, and PFAS [perfluoro- and poly-fluoroalkyl substances].

Trends are stated two ways:

- In each category, the trends in concentrations are estimated by visually comparing the values for this current round of sampling to the previous round of sampling [as agreed by K. Kathan, VTDEC Solid Waste Program, 3/03/2015);

TEL: 802-860-9400 • FAX: 802-860.9440 • www.waiteenv.com • 7 Kilburn St. Suite 301, Burlington, VT 05401

- Five-year trends in groundwater concentrations are visually estimated from the graphs, only for parameters which exceed GESs for at least half of the latest 5-year period [per approved updated Water Quality Monitoring Program, 2/14/2019]. The 5-year period for this current report is the period from May 2017 to May 2021. Some graphs show less than 5 years of data, because that is all that is available.

Refer to the summary table of trends on pages 3 – 5 of Appendix 1; individual parameter graphs are in the detailed summary tables later in Appendix 1.

DEC Comments on Water Quality Report Regarding Previous Sampling Round:

To date, no comment letter was received from VTDEC Solid Waste Program ("SWP") regarding the October 2021 Semi-Annual Water Quality Report.

I. GROUNDWATER

All monitoring wells were successfully sampled in May 2021 via WHEM's low-flow sampling SOP (except the three non-potable water supply wells, which were grab-sampled as usual, and one monitoring well with insufficient water). As per the SOP, all monitoring wells were field measured for depth to water; and temperature, specific conductance, dissolved oxygen (DO), pH, oxidation reduction potential (ORP) and turbidity readings were obtained until readings stabilized (or after one hour of data collection; whichever comes first), and samples were then collected. See summary tables in Appendix 1 and individual lab reports in Appendix 2. For a summary of recent trends, see Appendix 1, page 3; for tables showing standards exceedances in the May 2021 sampling round, see Appendix 1, pages 6-8.

Groundwater samples were analyzed by Endyne, Inc., of Williston, Vermont, or their sub-contracted certified laboratories if needed, for landfill indicator parameters, inorganic compounds, and volatile organic compounds (VOCs). All PFAS samples were analyzed by Alpha Analytical.

Various QA/QC samples (trip blanks, duplicates, and equipment blank samples) are collected throughout sampling. With the exception of COD values in duplicate 2 and duplicate 4, all QA/QC sample results were either an acceptable duplicate match and/or non-detected for VOCs and PFAS, indicating acceptable sampling and laboratory procedures in the May 2021 sampling round. See Section IV for details.

A. UP-GRADIENT OR CROSS-GRADIENT OF LINED AND UNLINED LANDFILLS (17 MONITORING WELLS)

Based on groundwater elevations and the map of groundwater flow directions in May 2021 see this report's section VII on page 27, and the map on page 2 of Appendix 1), there are seventeen (17) wells that provide information on the up-gradient, or cross-gradient groundwater at this site: 409, 705, 706, BRW-3S, BRW-3D, BRW-4S, BRW-5S, E-3, G-7D, G-9D, G-10DR, G-11D, G-26BR, G-26D, DW-21 Office, DW-36516 St. Onge House & Barn (2005), and DW-30616 Maintenance Shop. In May 2021, all seventeen (17) of these wells were successfully sampled. See Appendix 1, page 1 for the locations of these wells.

Trends in Up-gradient / Cross-gradient Groundwater Quality Results, May 2021: Trends in the May 2021 groundwater water quality results were evaluated as explained above, and are summarized below:

Indicator parameters showed *downward trends* in BRW-4S, G-7D, G-9D, G-11D and G-26D; *upward trends* were noted in 705, BRW-3S and DW-30616 Maintenance; and *mixed trends* were noted in 409, 706, BRW-3D, BRW-5S, E-3, G-10DR, G-26BR, DW-21 Office, and DW-36516 (St. Onge House and Barn (2005).

Inorganic compounds including Metals showed *downward trends* in 409, 705, 706, BRW-3D, BRW-4S, G-7D, G-9D, G-10DR, G-26BR, G-26D, DW-21 Office, and DW-30616 Maintenance; *upward trends* were noted in BRW-3S, E-3, G-11D and DW-36516 (St. Onge House and Barn (2005); and *mixed trends* were noted in BRW-5S.

VOCs were non-detected in *all* up-gradient or cross gradient monitoring wells, as is generally typical.

PFAS were sampled in the following wells from this group: BRW-3S, BRW-3D, BRW-4S and BRW-5S. All these wells were non-detected for PFAS. See below for discussions within each well summary.

Summaries of Up-gradient / Cross-gradient Groundwater Quality Results, from individual monitoring wells:

409: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- All indicator parameters and metals are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

705: In general, indicator parameters trended up, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has sporadically occurred in their past 5-year range.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

706: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- Chloride, Total [44.0 mg/L]. The May 2021 concentration is its highest in the past 5-year range, it has no GES.
- COD [380 mg/L]. The May 2021 concentration is its highest in the past 5-year range, and was verified by the laboratory as correct; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

BRW-3S: In general, indicator parameters and metals trended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- COD [37 mg/L]. The May 2021 concentration is its highest in the past 5-year range; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

BRW-3D: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Arsenic, Total [26.9 ug/L] and Dissolved [27.5 ug/L] [GES = 10 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trends are stable.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

BRW-4S: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in the past 5-year range.
- All metals and indicator parameters are within their past 5-year range.
- VOC were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

BRW-5S: In general, indicator parameters and metals were mixed in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [0.960 mg/L] and Dissolved [0.0.960 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down, then up.
- One metal was detected at its highest concentration in the past 5-year range:
  - Iron, Dissolved [19 mg/L]. It is routinely detected in the past 5-year range; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

E-3: In general, indicator parameters were mixed, and metals trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [0.690 mg/L; [GES = 0.300 mg/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trends are mixed.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as has been generally typical in their 3-year range.
- PFAS analysis is not required.

G-7D: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has been typical in their past 3.5-year range.
- All metals and indicator parameters are within their past 3.5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-9D: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 3.5-year range:
  - Arsenic, Total [10.4 ug/L] and Dissolved [10.3 mg/L] [GES = 10 ug/L]. The May 2021 concentrations are within the past 3.5-year range; Graph: Recent trends are mixed.
- All other metals and indicator parameters are within their past 3.5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-10DR: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has been typical in their past 3.5-year range.
- One metal was tied at its highest concentration in the past 3.5-year range:
  - Manganese, Dissolved [0.180 mg/L; GES = 0.300 mg/L]. The May 2021 concentration is below the GES, as is typical in the past 3.5-year range.
- All other metals and indicator parameters are within their past 3.5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-11D: In general, indicator parameters trended down, and metals trended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has been typical in their past 3.5-year range.
- One metal was detected at its highest concentration in the past 3.5-year range:
  - Chromium, Total [15.2 ug/L; GES = 100 ug/L]. The May 2021 concentration is below the GES, as is typical in the past 3.5-year range.
- All other metals and indicator parameters are within their past 3.5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-26BR: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has been typical in the past 5-year range.
- All metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-26D: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as has been typical in the past 3.5-year range.
- All metals and indicator parameters are within their past 3.5-year range.
- VOCs were non-detected in this well.

- PFAS analysis is not required.

DW-21 (Office; bedrock non-potable water supply well): In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- All metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

DW-36516 (St. Onge House and Barn; 2005 bedrock water supply well): In general, indicator parameters were mixed, and metals tended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical.
- Two metals were detected at their highest concentrations in the past 5-year range:
  - Iron, Total [0.240 mg/L]. It is routinely detected in the past 5-year range; it has no GES.
  - Manganese, Total [0.140 mg/L] and Dissolved [0.100 mg/L] [GES = 0.300 mg/L]. It is below the GES, and is routinely detected in the past 5-year range.
- One metal was detected for the first time:
  - Zinc, Total [0.029 mg/L]. It has no GES.
- All other metals and indicator parameters are within their 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

DW-30616 Maintenance Shop: In general, indicator parameters trended up and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- One metal was detected at its highest concentration in the past 5-year range:
  - Chloride, Total [19 mg/L]. It is routinely detected in the past 5-year range; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

B. BETWEEN LINED AND UNLINED LANDFILLS (1 WELL)

There is one compliance monitoring well (MW-F1) between the lined and unlined landfills. Trends in the May 2021 groundwater water quality results were evaluated as explained on page 1, and are summarized below:

FI: In general, indicator parameters trended up, metals were mixed, and VOCs trended down in May 2021 compared to the previous round. Notable:

- Two metals exceeded their GES's, as has been typical in the past 5-year range:
  - Arsenic, Total [29.4 ug/L] and Dissolved [11.7 ug/L] [GES = 10 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trends are up;
  - Manganese, Total [8.2 mg/L] and Dissolved [8.5 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down, then up, recently stable.
- Two metals were detected at their highest concentrations in the past 5-year range:

- Iron, Dissolved [9.3 mg/L]. It is routinely detected in the past 5-year range; it has no GES;
- Sodium, Total [94 mg/L]. It is routinely detected in the past 5-year range; it has no GES.

- All other metals and indicator parameters are within their past 5-year range.
- One VOC exceeded its GES, as has been typical in the past 5-year range:
  - Benzene [8.3 ug/L; GES = 5 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trend is down.
- All other VOCs are within their past 5-year range, with no new detections.
- PFAS analysis is not required.

C. DOWN-GRADIENT OF UNLINED AREAS A AND B (9 MONITORING WELLS)

Based on groundwater elevations and the map of groundwater flow directions in May 2021 (see this report's section VII on page 27, and the map on page 2 of Appendix 1), and based on the September 2014 evaluation of groundwater flow directions beneath and within Unlined Areas A & B, there are nine (9) wells that provide information down-gradient of Unlined Areas A & B at this site: 412R, A1, B1, BRW-1, BRW-2R, D1R, D2, P2R-R and P8 (possibly). In May 2021, all nine (9) of these wells were successfully sampled.

See Appendix 1, page 1 for the locations of these wells.

Trends in Water Quality Results, May 2021: Trends in the May 2021 groundwater water quality results were evaluated as explained on page 1, and are summarized below:

Indicator parameters showed *downward trends* in B1 and BRW-2R; *upward trends* were noted in A1, BRW-1, D2 and P8; and *mixed trends* were noted in and 412R, D1R and P2R-R.

Inorganic compounds including Metals, showed *downward trends* in P2R-R and P8; *upward trends* were noted in 412R, A1, B1, BRW-1, BRW-2R and D1R; and *mixed trends* were noted in. D2.

VOCs were non-detected in 412R, B1, BRW-1, BRW-2R, D1R, and P8; *downward trends* were noted in D2 and P2R-R; and *upward trends* were noted in A1.

PFAS was sampled in the following wells from this group: BRW-1, BRW-2R and P2R-R. P2R-R showed the clear presence of PFAS; this is not unexpected, given its location only about 20 ft from Unlined Area A. *An upward trend* was noted in P2R-R, the two other sampled wells were non-detected in May 2021, as has been the case since PFAS sampling began. See below for discussions within each well summary.

Summaries of WQ Results, from individual monitoring wells:

412R: In general, indicator parameters were mixed, and metals trended up in May 2021 compared to the previous round. Notable:

- Two metals exceeded their GES's, as has been typical in the past 5-year range:
  - Arsenic, Total [13.0 ug/L] and Dissolved [14.3 ug/L] [GES = 10 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trends are down.

  - Manganese, Total [0.820 mg/L] and Dissolved [0.810 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are stable.
- Two metals were detected at their highest concentrations in the past 5-year range:
  - Chloride, Total [27 mg/L]. It is routinely detected in the past 5-year range; it has no GES;
  - Iron, Dissolved [13 mg/L]. It is routinely detected in the past 5-year range; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

A1: In general, indicator parameters, metals, and VOCs trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Arsenic, Total [13.4 ug/L] and Dissolved [11.2 ug/L] [GES = 10.0 ug/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down.
- One metal was tied at its highest concentration in the past 5-year range:
  - Manganese, Total [0.730 mg/L] and Dissolved [0.670 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are above the GES, as is typical in the past 5-year range, with total Manganese tied at its highest concentration; Graph: 5-year trends are up, then stable.
- One metal was detected at its highest concentration in the past 5-year range:
  - Iron, Total [7.8 mg/L]. It is routinely detected in the past 5-year range; it has no GES.
- All other metals and indicator parameters are within their past 5-year range.
- No VOCs exceeded GESs, as sporadically occurs in their past 5-year range; there were no new detections.
- PFAS analysis is not required.

B1: In general, indicator parameters trended down, and metals trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Arsenic, Total [19.0 ug/L] and Dissolved [20.8 mg/L] [GES = 10 ug/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are stable.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

BRW-1: In general, indicator parameters and metals trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [1.30 mg/L] and Dissolved [1.20 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down, then up.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

BRW-2R: In general, indicator parameters trended down, and metals trended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- All metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

D1R: In general, indicator parameters were mixed, and metals trended up in May 2021 compared to the previous round. Notable:

- One metal was detected at its highest concentration in the past 5-year range:
  - Arsenic, Total [17.9 ug/L] and Dissolved [16.5 ug/L] [GES = 10 ug/L]. The May 2021 concentrations are above the GES, as is typical in the past 5-year range, with dissolved arsenic at its highest concentration over the past 3-year range since it has been analyzed; Graph: 5-year trends are down, then up.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

D2: In general, indicator parameters trended up, metals were mixed, and VOCs trended down in May 2021 compared to the previous round. Notable:

- Two metals were detected at their highest concentrations in the past 5-year range:
  - Arsenic, Total [7,920 ug/L]; and Dissolved [6,580 mg/L] [GES = 10 ug/L]. The May 2021 concentrations are above the GES, as is typical in the past 5-year range, with dissolved arsenic at its highest concentration over the past 3-year range since it has been analyzed; Graph: 5-year trends are up then stable;
  - Nickel, Total [298 ug/L]; and Dissolved [321 ug/L] [GES = 100 ug/L]. The May 2021 concentrations are above the GES, as is typical in the past 5-year range, with dissolved nickel at its highest concentration in the past 3-year range since it has been analyzed; Graph: 5-year trends are down, recently up.
- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [0.33 mg/L] and Dissolved [0.41 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down.
- All other metals and indicator parameters are within their past 5-year range.
- Two VOCs exceeded their GES's, as has been typical in their past 5-year range:
  - Acetone [6,910 ug/L; GES = 950 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trend is stable;
  - 2-butanone [9,890 ug/L; GES = 511 ug/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trend is stable.
- All other VOCs are within their past 5-year range, with no new detections.
- PFAS analysis is not required.

P2R-R: In general, indicator parameters were mixed, metals and VOCs trended down, and PFAS trended up in May 2021 compared to the previous round. Notable:

- Two metals exceeded their GES's, as has been typical in their past 5-year range:
  - Arsenic, Total [105.0 ug/L] and Dissolved [68.9 ug/L] [GES = 10 ug/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down, then mixed;

  - Manganese, Total [0.510 mg/L] and Dissolved [0.350 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down.
- All other metals and indicator parameters are within their past 5-year range.
- All VOCs are within their past 5-year range, with no new detections.
- PFAS: The sum of the five VT-regulated PFAS exceeded the GES [81.1 ng/L; GES = 20 ng/L], and trended slightly up in May 2021 compared to October 2020; Graph: 2-year trend is down, then stable.

MW-P8: In general, indicator parameters trended up, and metals trended down in May 2021 compared to the previous round. Notable:

- Two metals exceeded their GES's, as has been typical in their past 5-year range:
  - Arsenic, Total [36.7 ug/L] and Dissolved [17.9 ug/L] [GES = 10 ug/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down, then up;
  - Manganese, Total [4.70 mg/L] and Dissolved [4.70 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trends are down.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

D. DOWN-GRADIENT OF LINED LANDFILLS, AND NOT IMPACTED BY UNLINED AREAS A & B (10 WELLS)

Based on groundwater elevations and the map of groundwater flow directions in May 2021 (see this report's section VII on page 27, and the map on page 2 of Appendix 1), and based on the September 2014 evaluation of groundwater flow directions beneath and within Unlined Areas A & B, there are ten (10) wells that provide information on the down-gradient area of the lined landfills, and which are not impacted by Unlined areas A & B: 103, 703, 805M, E1, E2, G-12BR, G-12S, G-27D, G-27S and P6 (possibly). In May 2021, all ten (10) of these wells were successfully sampled. See Appendix 1, page 1 for the locations of these wells.

Trends in Groundwater Quality Results Down-gradient of Lined Landfills, May 2021: Trends in the May 2021 groundwater water quality results were evaluated as explained on page 1, and are summarized below:

Indicator parameters showed *downward trends* in G-12BR and G-12S, *upward trends* were noted in 703, and *mixed trends* were noted in 103, 805M, E1, E2, G-27D, G-27S and P6.

Inorganic compounds including Metals, showed *downward trends* in 103, 703, 805M, E2, G-12BR, G-12S, G-27D and G-27S; *upward trends* in P6, and *mixed trends* were noted in E1.

VOCs showed *downward trends* in 103, and all other down-gradient monitoring wells were non-detected, as usual.

PFAS was sampled in the following wells from this group: E1, E2, G-12S, and P6. *An upward trend* was noted in E1, with the sum of the five VT-regulated PFAS being non-detected in the other three wells.

Summaries of Groundwater Results Down-gradient of Lined Landfills, from individual monitoring wells:

103: In general, indicator parameters were mixed, and metals and VOCs trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has generally been typical in the past 5-year range:
  - Manganese, Total [0.640 mg/L] and Dissolved [0.410 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range.
- All other metals and indicator parameters are within their past 5-year range.
- Tetrahydrofuran [12.8 ug/L] continues to be detected at a low concentration, after its first detection last round [13.5 ug/L]; it has no GES.
- All other VOCs were non-detected in this well, as is typical in their past 5-year range.
- PFAS analysis is not required.

703: In general, indicator parameters trended up, and metals trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [0.630 mg/L; GES = 0.300 mg/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trend is generally down.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

805M: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- One metal was tied at its highest concentration in the past 5-year range:
  - Arsenic, Total [17.3 ug/L] and Dissolved [18.3 ug/L] [GES = 10 ug/L]. The May 2021 concentrations are above the GES, as is typical in the past 5-year range, with dissolved arsenic tied at its highest concentration; Graph: 5-year trends are up.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS analysis is not required.

E1: In general, indicator parameters and metals were mixed in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in the past 5-year range.
- All metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as is typical.
- PFAS: The sum of the five VT-regulated PFAS was far below the GES [3.61 ng/L; GES = 20 ng/L]. The sum trended very slightly up in May 2021 compared to October 2020, but the overall 3-year trend is down.

E2: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as has been typical in the past 5-year range:
  - Manganese, Total [2.500 mg/L] and Dissolved [2.400 mg/L] [GES = 0.300 mg/L]. The May 2021 concentrations are within the past 5-year range; Graph: 5-year trend is down.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well, as generally is typical.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

G-12BR: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-12S: In general, indicator parameters and metals trended down in May 2021 compared to the previous round. Notable:

- The sample collected in May 2021 was generally back within normal turbidity range [54.3 NTU], after the October 2020 sample was quite turbid [92 NTU] in comparison to previous sampling events.
- No metals exceeded their GES's, as is typical in their past 5-year range.
- VOCs were non-detected in this well.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

G-27D: In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their GES's, as is typical in their past 5-year range.
- All metals and indicator parameters are within their 5-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

G-27S: Due to insufficient water, this well is not low-flowed; it is purged of three well volumes utilizing a disposable hand bailer, allowed to recharge, then samples and field parameters are collected. In May 2021, the water was silty at the start of purging, and continued to remain silty through to sample collection. In general, indicator parameters were mixed, and metals trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as typically occurs in the past 3-year range:
  - Manganese, Total [0.310 mg/L; GES = 0.300 mg/L]. the May 2021 concentration is above the GES, as has generally occurred in the past 3-year range; Graph: 3-year trend is mixed.
- All other metals and indicator parameters are within their 3-year range.
- VOCs were non-detected in this well.
- PFAS analysis is not required.

P6: In general, indicator parameters were mixed, and metals trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its GES, as typically occurs in the past 5-year range:
  - Manganese, Total [0.850 mg/L; GES = 0.300 mg/L]. The May 2021 concentration is within the past 5-year range; Graph: 5-year trend is stable, then up.

- All other metals and indicator parameters are within their past 5-year range.
- VOCs were non-detected in this well.
- PFAS: the sum of the five VT-regulated PFAS continued to be stable, non-detected.

II. STATISTICAL ANALYSES OF EXCEEDANCES OF GROUNDWATER STANDARDS

Statistical Analyses

In accordance with the approved Water Quality Monitoring Program, statistical analyses are conducted on groundwater quality data for a running 5-year look-back period, and only on groundwater parameters for which more than half of the selected-period's data points exceeds a Primary Groundwater Enforcement Standard (GES). In May 2021, statistical analyses and visual estimations of trends are conducted on the 5-year period from May 2017 through May 2021.

Statistical analyses using EasyFit of 95% confidence intervals were calculated on normalized data (when normalization was possible). In instances where the raw data are not normal, three transformations were conducted (natural log, square root, and exponential). If the transformed data also are not normal, the statistical analyses are conducted on whichever data form is closest to normality, as indicated by the sum of the absolute values of skewness and kurtosis being closest to zero.

Statistical Exceedances of Primary GESs are Seen at the Following Locations:

Upgradient or cross-gradient of lined and unlined landfills (17 wells): Total and dissolved arsenic and/or total and dissolved manganese levels statistically exceed GESs in five (5) of these wells: 705, BRW-3D, BRW-5S, E-3 and G-9D.

Between lined and unlined landfill (1 well): Total and dissolved arsenic and total and dissolved manganese levels statistically exceed GESs in this one well: F1. Benzene levels statistically exceed the GES in this one well: F1.

Downgradient of Unlined Areas A & B (9 wells): Total and dissolved arsenic, and/or total and dissolved manganese, and/or total and dissolved nickel levels statistically exceed GESs in eight (8) of these wells: 412R, A1, B1, BRW-1, D1R, D2, P2R-R, and P8. Acetone, benzene, 2-butanone and/or vinyl chloride levels statistically exceed GESs in two (2) of these wells: A1 and D2. The sum of the five VT-regulated PFAS statistically exceed the GES in P2R-R.

Downgradient of lined landfills, and not impacted by Unlined Areas A & B (10 wells): Total and dissolved arsenic and/or total and dissolved manganese levels statistically exceed GESs in five (5) of these wells: 703, 805M, E2, G-27S and P6.

Preliminary Analysis of Cause and Significance of GES Exceedances

The metals with statistical GES exceedances are common naturally-occurring compounds in Vermont groundwater. However, the standards exceedances are generally greater in magnitude in the down-gradient wells, reflecting impacts from the unlined landfill and/or impacts from changes in the redox regime as groundwater travels the long distances beneath the lined phases.

The VOCs and/or PFAS with statistical GES exceedances between landfills and downgradient of Unlined Areas A & B, are likely the result of migration of leachate from the Unlined landfill Areas A & B.

III. SURFACE WATER, INCLUDING UNDERDRAIN OUTLETS

There are 12 surface water sampling stations on streams, ditches, and rivers at and near the NEWSVT facility. Note that the upstream/downstream/side-gradient characteristics stated below are based on surface water flow directions, not groundwater flow directions, and that the discharges from the underdrain systems are listed in this section because they are regulated by VTDEC as surface water: See location map, summary tables and individual lab reports in the Appendices. For a summary of recent trends, see Appendix 1, page 4. These current trends were visually estimated in comparison to the previous sampling event. For a table showing exceedances of surface water quality standards in the May 2021 sampling round, see Appendix 1, page 9.

Surface water quality results are compared to the Vermont Water Quality Standards (VWQS); effective 1/15/17, Appendix C, for Protection of Human Health (Consumption of Organisms only), and Protection of Aquatic Biota, Average Acceptable Concentration (AAC) Chronic Criteria. If no Human Health standard is shown, the standard for Protection of Aquatic Biota, Chronic Criteria is used or calculated using formulas provided in Appendix D and E of the VWQS. Dissolved concentrations of select metals (cadmium, chromium, copper, lead, nickel, and zinc) are estimated using laboratory-reported total metals concentrations and conversion factors provided in Appendix D of the VWQS. Both total and dissolved concentrations are now included in the data tables. Some metals are non-detected; their detection limits are higher than their water quality standards, so the actual concentrations of these metals cannot be compared to standards.

A. UPSTREAM OR SIDE-GRADIENT SURFACE WATER LOCATIONS

There are three (3) upstream or side-gradient surface water sampling points at NEWSVT: SW-1 Black River Upstream, SW-3 Landfill Brook East, and SW-9 Southwest Stream #1.

Trends in Upstream or Side-Gradient Surface Water Quality Results, May 2021: Trends in the May 2021 surface water quality results were evaluated as explained above, and are summarized below:

Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in SW-1, and *upward trends* in SW-3, and SW-9.

VOCs were non-detected in all upstream or side-gradient surface water locations.

SVOCs were non-detected in all upstream surface or side-gradient surface water locations.

PFAS analysis is not required from any upstream or side-gradient surface water location.

Summaries of Upstream or Side-Gradient Surface WQ Results, from individual locations:
SW-1 Black River Upstream: In general, inorganic compounds, which include metals and indicator parameters, trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their VWQSs, as sporadically occurs.

- All metals, inorganic compounds and indicator parameters are within historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 1999.
- SVOCs were non-detected, as is typical since analysis began in October 2004.
- PFAS analysis is not required.

SW-3 Landfill Brook East: In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is generally typical:
  - Arsenic, Total [1.8 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 2000, with the exception of two low-level detections in May 2011 and May 2017.
- SVOCs were non-detected, as is typical since analysis began in May 2005.
- PFAS analysis is not required.

SW-9 Southwest Stream #1: In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- Two metals exceeded their VWQS, as sporadically occurs:
  - Arsenic, Total [1.7 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range;
  - Iron, Total [1.7 mg/L; VWQS = 1.0 mg/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs remain non-detected as is typical since analysis began in May 2016.
- SVOCs remain non-detected in the 3-year sampling history.
- PFAS analysis is not required.

B. DOWNSTREAM SURFACE WATER LOCATIONS

There are nine (9) downstream surface water sampling points at NEWSVT: SW-2 Black River Downstream, SW-4 North Landfill Stream, SW-5 St. Onge Ditch, SW-6 Landfill Brook East, SW-7A Western Stream, SW-8 Wetland Below UD-1, 2, SW-10 Southwest Stream #2, SW-11 Southwest Stream #3 and SW-12 Southwest Stream #4.

Trends in Downstream Surface Water Quality Results, May 2021: Trends in the May 2021 surface water quality results were evaluated as explained above, and are summarized below:

Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in SW-2, SW-6, SW-8, SW-10 and SW-11, and *upward trends* in and SW-4, SW-5, SW-7A and SW-12.

VOCs were non-detected in all sampled downstream surface water locations.

SVOCs were non-detected in all sampled downstream surface water locations.

PFAS analysis is required only at SW-8 (letter from K. Kathan, dated 4/16/2020), during the semi-annual sampling events in May and October. In May 2021, PFAS showed an *upward trend* in SW-8. PFAS analysis is not required from any other downstream or side-gradient surface water location.

Summaries of Downstream Surface WQ Results, from individual locations:

SW-2 Black River Downstream: In general, inorganic compounds, which include metals and indicator parameters, trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their VWQSs, as sporadically occurs.
- All metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 1999, with the exception of one low-level detection in October 2004.
- SVOCs were non-detected, as is typical since analysis began in May 2005.
- PFAS analysis is not required.

SW-4 North Landfill Stream: In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their VWQSs, as is typical.
- One inorganic compound was detected at its highest concentration in the historic range:
  - Sodium [51 mg/L]. It is routinely detected; it has no VWQS.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 1999.
- SVOCs were non-detected, as is typical since analysis began in October 2004.
- PFAS analysis is not required.

SW-5 St. Onge Ditch: In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- Two metals exceeded their VWQS, as sporadically occurs:
  - Arsenic, Total [1.8 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range;
  - Iron, Total [1.2 mg/L; VWQS = 1.0 mg/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in October 2004.
- SVOCs were non-detected, as is typical since sampling began in October 2004, with the exception of one low-level detection in May 2018.
- PFAS analysis is not required.

SW-6 Landfill Brook East: In general, inorganic compounds, which include metals and indicator parameters, trended down in May 2021 compared to the previous round. Notable:

- No metals exceeded their VWQSs, as sporadically occurs.
- One inorganic compound was detected at its highest concentration in the historic range:
  - Sodium [70 mg/L]. It is routinely detected; it has no VWQS.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 2005.

- SVOCs were non-detected, as is typical since analysis began in May 2005.
- PFAS analysis is not required.

SW-7A Western Stream: In general, inorganic compounds, which include metals and indicator parameters, trended up in May2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical:
  - Arsenic, Total [5.8 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- Two inorganic compounds were detected at their highest concentration in the historic range:
  - Chloride [14 mg/L; VWQS = 230 mg/L]. It is routinely detected and is well below the VWQS;
  - Sodium [6.5 mg/L]. It is routinely detected; it has no VWQS.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs remain non-detected since analysis began in May 2016.
- SVOCs remain non-detected in the 3-year sampling history.
- PFAS analysis is not required.

SW-8 Wetland Below UD-1,2: In general, inorganic compounds, which include metals and indicator parameters, trended down, and PFAS trended up in May 2021 compared to the previous round. Notable:

- No metals exceeded their VWQSs, as sporadically occurs.
- All metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs were non-detected, as is typical since sampling began in October 2004.
- SVOCs were non-detected, as is typical since sampling began in October 2004.
- PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended up in May 2021 to its highest concentration to date, compared to the previous round in October 2020, with nine (9) PFAS compounds reported at concentrations ranging from 2.11 ng/L to 81.1 ng/L. Fifteen (15) other PFAS were non-detected.

SW-10 Southwest Stream #2: In general, inorganic compounds, which include metals and indicator parameters trended down in May 2021, compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical in the historic range:
  - Arsenic, Total [2.3 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs remain non-detected in the 3-year sampling history.
- SVOCs remain non-detected in the 3-year sampling history.
- PFAS analysis is not required.

SW-11 Southwest Stream #3: In general, inorganic compounds, which include metals and indicator parameters, trended down in May 2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical in the historic range:
  - Arsenic, Total [3.6 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.

- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs remain non-detected since analysis began in May 2016.
- SVOCs remain non-detected in the 3-year sampling history.
- PFAS analysis is not required.

SW-12 Southwest Stream #4: In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical in the historic range:
  - Arsenic, Total [4.3 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within their historic ranges.
- VOCs remain non-detected since analysis began in May 2016.
- SVOCs remain non-detected in the 3-year sampling history.
- PFAS analysis is not required.

C. UNDERDRAINS

Each of the lined landfill phases (Phases 1, 2, 3, 4 and 6) has an independent underdrain system of perforated pipes bedded in high-permeability drainage sand and stone located either in trenches or a continuous blanket beneath or within the engineered soil drainage system: Underdrain Outlet Phase I (UD-1), Underdrain Outlet Phase 2 (UD-2), Underdrain Outlet Phase 3 (UD-3), Underdrain Outlet Phase 4 (UD-4) and Underdrain Outlet Phase 6 [UD-6]. The purpose of the underdrain systems is to isolate the lined landfills from groundwater, and to discharge the intercepted groundwater by gravity flow at separate locations on the lower slopes around the margins of the landfill. See the paragraph below for details about the current status of each of these underdrain outlets. The Solid Waste Program has determined that the discharges from the underdrains are regulated as surface water. See location map, summary tables and individual lab reports in the Appendices. For a summary of recent trends, see Appendix 1, page 4. These current trends were visually estimated in comparison to the previous sampling event. For a table showing exceedances of surface water quality standards in the underdrain discharges in the May 2021 sampling round, see Appendix 1, page 10.

The underdrain pipes are periodically flushed with high-pressure water. NEWSVT personnel reported that the underdrain pipes were last flushed during the second week of September 2020.

Status of UD-1 and UD-2: Beginning on August 20, 2019, the discharges from UD-1 and UD-2 are no longer released to the slope below Phase 2. These discharges have been contained, and are managed as leachate by being pumped to the leachate holding tank (refer to *comment letter from SWP; Kasey Kathan, dated 8/19/2019 regarding WHEM's May 2019 Water Quality Report* for details). The flow rates from UD-1 and UD-2 cannot be measured beginning October 2019 because those flows now discharge into their own very deep manholes, in which it is not possible to measure their discharge rates safely or accurately. From these two manholes, the flows are pumped into the leachate collection system. Using a peristaltic pump, individual samples are collected of the liquids in the manholes for UD-1 and UD-2.

Status of UD-3 and UD-4: The discharges from UD-3 and UD-4 are currently released to the ground surface at the outlets of the underdrain pipes. The areas below these two underdrain discharge pipes were excavated in late May 2019 to allow for ease of sample collection and accurately measuring flow rates, as required by Condition 66 of the Solid Waste Cert. The flow rates from UD-3 and UD-4 are accurately measured directly at these two discharge points using an empty calibrated container and stopwatch.

Treatment options for the discharge from UD-3 are currently being considered by NEWSVT and the VT DEC.

Status of UD-6: The discharge pipe for Underdrain 6 was installed in the late fall of 2020. Sampling and measurements of flow rates from UD-6 will begin after Phase VI is operational, with the October 2021 compliance sampling round.

Underdrain water quality results are compared to the Vermont Water Quality Standards (VWQS); effective 1/15/17, Appendix C, for Protection of Human Health (Consumption of Organisms only), and Protection of Aquatic Biota, Average Acceptable Concentration (AAC) Chronic Criteria. If no Human Health standard is shown, the standard for Protection of Aquatic Biota, Chronic Criteria is used or calculated using formulas provided in Appendix D and E of the VWQS. Dissolved concentrations of select metals (cadmium, chromium, copper, lead, nickel, and zinc) are estimated using laboratory-reported total metals concentrations and conversion factors provided in Appendix D of the VWQS. Both total and dissolved concentrations are now included in the data tables. Some metals are non-detected; their detection limits are higher than their water quality standards, so the actual concentrations of these metals cannot be compared to standards.

Trends in Underdrain Water Quality Results, May 2021: Trends in the May 2021 underdrain water quality results were evaluated as explained above, and are summarized below:

Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in UD-1, and *upward trends* in UD-2, UD-3 and UD-4.

VOCs were non-detected in all underdrain locations.

SVOCs were non-detected in all underdrain locations.

PFAS has been analyzed since July 2019 in UD-1 and UD-2, and since September 2019 in UD-3 and UD-4. PFAS showed *downward trends* in UD-1 and UD-2, with PFAS detections not surprising given the proximity of Unlined Landfill Areas A & B to the underdrain collection systems beneath Phases I and II. PFAS an *upward trend* in UD-3, and stable very low-level detections in UD-4. While PFAS continue to be detected in all underdrains, no inorganic or organic indicators of landfill impacts are seen (VOCs and SVOCs are non-detected).

Summaries of Underdrain WQ Results, from individual locations:

Underdrain Outlet Phase I (UD-1): In general, inorganic compounds, which include metals and indicator parameters, trended down in May 2021 compared to the previous round. Notable:

- Two metals exceeded their VWQS, as is typical:
  - Arsenic, Total [3.8 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range;

  - Iron, Total [2.0 mg/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within historic ranges.
- VOCs were non-detected, as is typical since October 2010.
- SVOCs were non-detected, as is typical since analysis began in October 2004.
- PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended down in May 2021 compared to the previous round in October 2020, with nine (9) PFAS compounds reported at concentrations ranging from 2.17 ng/L to 71.9 ng/L. Fifteen (15) other PFASs were non-detected. The overall 2-year PFAS trend in UD-1 is downward. This discharge is currently diverted into the leachate collection system.

Underdrain Outlet Phase 2 (UD-2): In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- Two metals exceeded their VWQS, as is typical:
  - Arsenic, Total [46.3 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range;
  - Iron, Total [10.0 mg/L]. The May 2021 concentration is within the historic range.
- All other metals, inorganic compounds and indicator parameters are within historic ranges.
- VOCs were non-detected, as is typical since October 2018.
- SVOCs were non-detected, as is typical since analysis began in October 2004, with the exception of one low-level detection in October 2016.
- PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended down in May 2021 compared to the previous round in October 2020 with seven (7) PFAS compounds reported, at concentrations ranging from 4.97 ng/L to 66.6 ng/L. Seventeen (17) other PFASs were non-detected. The overall 2-year PFAS trend in UD-2 is downward since May 2020. This discharge is currently diverted into the leachate collection system.

Underdrain Outlet Phase 3 (UD-3): In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical:
  - Arsenic, Total [5.5 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- One inorganic compound was tied at its highest concentration to date:
  - Sodium [13.0 mg/L]; it is routinely detected and has no VWQS.
- All other metals, inorganic compounds and indicator parameters are within historic ranges.
- VOCs were non-detected, as is typical since sampling began in May 1999, with the exception of two low-level detections in May 2008.
- SVOCs were non-detected, as is typical since analysis began in October 2004.
- PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended up in May 2021 compared to the previous round in October 2020, with six (6) PFAS compounds reported at concentrations ranging from 12.4 ng/L to 149 ng/L. Eighteen (18) other PFASs were non-detected. There is no clear 2-year PFAS trend in UD-3.
- The temperature in UD-3 was measured at 22.60 deg. C during sampling. The overall pattern of UD-3 temperature still appears to be rising, as it has since May 2001 (7.5 deg. C). The increase in UD-3 temperature roughly parallels the temperatures of the Phase III leachate (see graph on page 334 of Appendix 1), although the Phase III leachate temperatures have recently declined somewhat, after peaking in May 2016 (Phase III, Cell 1: 28.2 deg. C, Phase III, Cell 2: 27.7 deg. C).

Underdrain Outlet Phase 4 (UD-4): In general, inorganic compounds, which include metals and indicator parameters, trended up in May 2021 compared to the previous round. Notable:

- One metal exceeded its VWQS, as is typical:
  - Arsenic, Total [4.4 ug/L; VWQS = 1.5 ug/L]. The May 2021 concentration is within the historic range.
- Two inorganic compounds were detected at their highest concentrations to date:
  - Chloride [25 mg/L; VWQS = 230 mg/L]; it is routinely detected and remains well below its VWQS;
  - Sodium [11.0 mg/L]; it is routinely detected and has no VWQS.
- All other metals, inorganic compounds and indicator parameters are within historic ranges.
- VOCs were non-detected, as is typical since sampling began in October 2006, with the exception of two low-level detections in May and June 2011.
- SVOCs were non-detected, as is typical since sampling began in October 2006.
- PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended very slightly up in May 2021compared to the previous round in October 2020, with two (2) PFAS compounds reported at very low concentrations ranging from 2.40 ng/L to 3.20 ng/L. Twenty-two (22) other PFASs were non-detected. The overall 2-year PFAS trend in UD-4 is stable.

IV. DRINKING WATER

There are no drinking water sources within 1,000 feet of the limits of solid waste at NEWSVT, and no drinking water sources are included in the Water Quality Monitoring Program or Solid Waste Management Facility Certification requirements. Three wells in the NEWSVT water quality monitoring program serve as non-potable water supplies for uses other than for drinking water, in buildings at the NEWSVT site, as follows: DW-36516 (St. Onge House & Barn, 2005 well) serves the vacant former St. Onge residence and barn; to our knowledge, it is not used as a drinking water source in either building. The two other wells (DW-21 Office, and DW-30616 Maintenance) are not used as potable water sources; bottled water is provided in each building. Water quality results for these wells have been incorporated into the groundwater section of this report, above.

V. LEACHATE

At NEWSVT, there are currently seven (7) individual landfill cell leachate sampling locations, and the sampling location at the combined leachate above-ground storage tank (AST), as follows: Lined Phase I, Phase II, Phase II Cell 1, Phase III Cell 2, Phase IV Cell 1, Phase IV Cell 2, Phase IV Cells 3&4, and the combined AST. Leachate from Unlined Areas A & B is not collected, so it cannot be sampled.

Between the previous sampling event in October 2020 and this current May 2021 sampling event, solid waste was being placed in available slope-side airspaces across Phase 1, Phase II and Phase IV. Leachate from these cells drains to the individual sumps located in Phase I, Phase II and Phase IV Cells 1, 2, and 3+4. All 8 leachate sampling locations were successfully sampled in May 2021; no samples were required from the secondary leak-detection systems.

Leachate from individual landfill cells: Each of the seven leachate pumping systems in the lined landfill cells has a separate pump station that allows the collection of discrete samples from both

the primary and secondary leachate collection systems in each cell. For routine leachate sampling, samples are collected from the primary leachate collection systems in each lined cell.

Possible sampling of secondary leak detection system liquid: If any of the secondary leachate leak-detection systems have accumulation rates which have recently exceeded 20 gallons per acre per day, a grab sample from that cell's secondary detection system is also collected. NEWSVT personnel will notify WHEM if and when secondary leachate sample collection is necessary. For the May 2021 sampling round, NEWSVT personnel notified WHEM that no sampling of any secondary leak-detection liquids was required.

Combined Leachate from the AST: As of the May 2021 sampling dates, leachate was stored in one AST. As part of the Phase VI expansion, a second AST was recently installed next to the initial AST. The liquid in the initial current AST that was sampled in May 2021 is a combination of Primary leachate (estimated by NEWSVT personnel at 95% +/- of tank contents), and Secondary detection-system liquids from all of the phases and cells of the lined landfill, and the collected discharges from Underdrain 1 and 2. Pumping systems in the AST send its contents to the Leachate Load-Out Building for tanker-truck loading. Samples of this combined leachate in the AST were collected from the piping that is used to fill the leachate tanker trucks in the Leachate Load-Out Building.

Laboratory Analyses, and Comparisons of Results to Standards: The leachate samples are analyzed for total metals and other inorganics, volatile organics (by EPA Method 8260C), semi-volatile organics (by EPA 8270C), and the AST leachate is analyzed for PFAS [by modified Method 537]. See the leachate quality summary tables in Appendix 1, and individual lab reports in Appendix 2. For a summary of recent leachate trends, see the table on page 5 of Appendix 1. These May 2021 trends were visually estimated in comparison to the previous sampling event.

- Comparison to Vermont Toxicity Characteristics: Leachate quality is compared to the *Vermont Hazardous Waste Management Regulations*, Toxicity Characteristic (TC); Chapter 2, Table 1: Maximum Concentration of Contaminants for the Characteristic of Toxicity (December 16, 2016). The lab results for the May 2021 leachate samples indicate that NEWSVT leachate is not characterized as toxic, because none of the parameters tested exceed the Vermont Toxicity Characteristic (TC) concentrations.

- Comparison to Guidelines for Accepting Landfill Leachate at Permitted Wastewater Treatment Facilities [WWTFs]: Concentrations of PFOA and PFOS in the AST leachate are compared to the VTDEC *Guideline Levels for Accepting Landfill Leachate at Permitted WWTFs* [Memo: P. Laflamme & C. Schwer, 7/06/2017]. The May 2021 concentrations of PFOA and PFOS are far below the concentrations for which there are restrictions regarding where landfill leachate may be disposed, as has been the case since leachate sampling for PFAS began in January 2018.

Phase I Leachate, Primary: In general, metals, other inorganics and SVOCs trended up, and VOCs trended down in May 2021 compared to the previous round. Notable:

- Metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- VOCs were within historical ranges; all were below their TCs, as is typical.
- SVOCs were within historical ranges; all were below their TCs, as is typical.

- PFAS analysis is not required.

Phase II Leachate, Primary: In general, metals and other inorganics trended down, and VOCs and SVOCs trended up in May 2021 compared to the previous round. Notable:

- Metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- All VOCs were within historical ranges; all were below their TCs, as is typical.
- SVOCs were within historical ranges; all were below their TCs, as is typical.
- PFAS analysis is not required.

Phase III Cell 1 Leachate, Primary: In general, metals trended down, and other inorganics, VOCs and SVOCs trended up in May 2021 compared to the previous round. Notable:

- All Metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- VOCs were within historical ranges; all were below their TCs, as is typical.
- One SVOC was detected; it is within its historic range and has no TC. All other SVOCs were non-detected, as is typical since October 2010, with the exception of three low-level detections in October 2014.
- PFAS analysis is not required.

Phase III Cell 2 Leachate, Primary: In general, metals trended down, and other inorganics, VOCs and SVOCs trended up in May 2021 compared to the previous round. Notable:

- Two metals were detected at their highest concentration to date:
  - Molybdenum, Total [0.012 mg/L]; this is its third low-level detection; it has no TC;
  - Selenium, Total [0.0028 mg/L; TC = 1 mg/L]; this is its fourth low-level detection; and it remains well below the TC.
- All other metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- VOCs were within historical ranges; all were below their TCs, as is typical.
- One SVOC was detected as is typical; it is within its historic range and has no TC.
- PFAS analysis is not required.

Phase IV Cell 1 Leachate, Primary: In general, metals, other inorganics and SVOCs trended up, and VOCs trended down in May 2021 compared to the previous round. Notable:

- One metal was detected at its highest concentration to date:
  - Arsenic, Total [1.21 mg/L; TC = 5 mg/L]; it is routinely detected, and remains well below the TC.
- One metal was detected for the first time:
  - Molybdenum, Total [0.011 mg/L]; this is a low-level detection; it has no TC.
- All other metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- All VOCs were within historic ranges, and below their TCs.
- One SVOC was detected for the first time:
  - Anthracene [6.6 ug/L]; this is a low-level detection; it has no TC.
- Three SVOCs were detected at their highest concentrations to date:
  - Fluoranthene [14.3 ug/L]; this is its second low-level detection; it has no TC;
  - Phenanthrene [22.7 ug/L]; it is sporadically detected; it has no TC;
  - Pyrene [9.2 ug/L]; this is its third low-level detection; it has no TC.

- All other SVOCs were within historic ranges, and below their TCs.
- PFAS analysis is not required.

Phase IV Cell 2 Leachate, Primary: In general, metals, other inorganics and SVOCs trended up, and VOCs trended down in May 2021 compared to the previous round. Notable:

- One metal was detected at its highest concentration to date:
  - Selenium, Total [0.0037 mg/L; TC = 1 mg/L]; this is its second low-level detection, and it remains well below the TC.
- All other metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- VOCs were within historical ranges; all were below their TCs, as is typical.
- SVOCs were all non-detected for the first time.
- PFAS analysis is not required.

Phase IV Cells 3 & 4 Leachate, Primary: In general, metals trended up, and other inorganics, VOCs and SVOCs trended down, in May 2021 compared to the previous round. Notable:

- One metal was detected at its highest concentration to date:
  - Lead, Total [0.0326 mg/L; TC = 5 mg/L]; it is sporadically detected at low-level concentrations, and it remains well below the TC.
- All other metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- VOCs were within historical ranges; all were below their TCs, as is typical.
- SVOCs were within historical ranges; all were below their TCs, as is typical.
- PFAS analysis is not required.

Combined Leachate Above-Ground Storage Tank [AST]: In general, metals, other inorganics, and SVOCs trended down, and VOCs trended up in May 2021 compared to the previous round. Notable:

- One metal was detected at its highest concentration to date:
  - Vanadium, Total [0.061 mg/L]; it is sporadically detected, and has no TC.
- All other metals and other inorganics were within historic ranges; all were below their TCs, as is typical.
- One VOC was detected at its highest concentration to date:
  - T-butanol [3,120 ug/L]; it is routinely detected, and has no TC.
- All other VOCs were within historical ranges; all were below their TCs, as is typical.
- SVOCs were within historical ranges; all were below their TCs, as is typical.
- PFAS compounds were detected in the leachate AST sample in May 2021, as expected. The concentrations of the two PFAS compounds that are regulated in Vermont landfill leachate [PFOA, PFOS] increased slightly in the May 2021 leachate AST sample when compared to the previous October 2020 sample, but are well within their moderately-fluctuating historic ranges. The May 2021 concentrations of PFOA and PFOS in the AST leachate are far below the concentrations for which there are restrictions regarding where landfill leachate may be disposed (per 2017 VDEC guideline levels cited above), as has been the case since leachate sampling for PFAS began in January 2018:
  - May 2021 PFOA: 1,790 ng/L = 1.5% of no-restrictions threshold;
  - May 2021 PFOA: 220 ng/L = 22% of no-restriction threshold.
- Also, the sum of all detected PFAS compounds in the AST leachate in May 2021 [14 compounds, of 24 compounds analyzed] decreased, and is within the historic range.

VI. QUALITY ASSURANCE/QUALITY CONTROL

Groundwater Samples, QA/QC for VOCs:
In May 20221, two QA/QC Groundwater Trip Blank samples were poured by WHEM from deionized water provided by Endyne, Inc., which was stored in the same cooler as the groundwater samples, and all VOC compounds were non-detected. This indicates acceptable sampling and laboratory procedures for groundwater samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC Equipment Blank sample was collected from the groundwater sampling pump used for low-flow sampling of some of the deep monitoring wells. This pump requires decontamination between each well use. To decontaminate the pump between each use, a mixture of de-ionized water mixed with Alconox is run through the pump while it is turned on, followed by a rinse with de-ionized water. At the end of sampling use, the pump is placed into a cylinder filled with laboratory provided de-ionized water, and the Equipment Blank sample is collected for VOC analysis. Lab results showed no VOC detections, indicating acceptable decontamination procedures in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, four QA/QC Duplicate Groundwater samples were collected from A1 (Dup 1), D1R (Dup 2), P8 (Dup 3), and 703 (Dup 4), and were analyzed for all required parameters. The lab results for Dup-1, Dup-2, Dup-3 and Dup-4 were all in close relation (concentrations in each duplicate pair had less than 45% relative differences), with the exception of COD values in duplicate 2 and duplicate 4. Upon inquiry to Endyne, personnel reviewed the COD data, and concluded that QC all looked good for the batch, and no transcription or dilution errors were found; the reason for the discrepancy between the samples and duplicates is unknown. All other values were in close relation, which indicates acceptable sampling and laboratory procedures for groundwater samples in the May 2021 sampling round.

Groundwater Samples, QAQC for PFAS:
In May 2021, one QA/QC PFAS Trip Blank sample was provided by Alpha Analytical for the cooler containing PFAS groundwater samples. All PFAS compounds were non-detect. This indicates acceptable sampling and laboratory procedures for PFAS groundwater samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC PFAS Equipment Blank sample was collected by WHEM to represent the equipment used for groundwater sample collection on various dates. This equipment is comprised of new disposable tubing used at location. All PFAS compounds were non-detect. This indicates the equipment used for PFAS groundwater sampling is PFAS free, and also indicates acceptable sampling and laboratory procedures for PFAS groundwater samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, three QA/QC PFAS Field Blank samples were poured on-site by WHEM each day PFAS groundwater samples were collected. All PFAS compounds were non-detect. This indicates WHEM personnel, and the ambient environment were free of PFAS compounds, and also indicates acceptable sampling and laboratory procedures for PFAS groundwater samples in the May 2021sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

Surface Water Samples, QA/QC for VOCs:
In May 2021, two QA/QC Surface Water Trip Blank samples were poured by WHEM from deionized water provided by Endyne, Inc. on each day surface water samples were collected, and all VOC compounds were non-detected. This indicates acceptable sampling and laboratory procedures for VOCs in surface water samples in the May 2021 sampling round.

Surface Water Samples, QAQC for PFAS:
In May 2021, one QA/QC PFAS Trip Blank sample was provided by Alpha Analytical for the cooler containing the PFAS surface water sample. All PFAS compounds were non-detect. This indicates acceptable sampling and laboratory procedures for the PFAS surface water sample in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC PFAS Field Blank sample was poured on-site by WHEM the day the PFAS surface water sample was collected. All PFAS compounds were non-detect. This indicates WHEM personnel, and the ambient environment were free of PFAS compounds, and also indicates acceptable sampling and laboratory procedures for the PFAS surface water sample in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

Underdrain Samples, QA/QC for VOCs:
In May 2021, one QA/QC Underdrain Trip Blank sample was poured by WHEM from deionized water provided by Endyne, Inc., and all VOC compounds were non-detected. This indicates acceptable sampling and laboratory procedures for VOCs in surface water samples in the May 2021 sampling round.

Underdrain Samples, QAQC for PFAS:
In May 2021, one QA/QC PFAS Trip Blank sample was provided by Alpha Analytical for the cooler containing PFAS underdrain samples. All PFAS compounds were non-detect. This indicates acceptable sampling and laboratory procedures for PFAS underdrain samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC PFAS Equipment Blank sample was collected by WHEM to represent the equipment used for underdrain sample collection. This equipment is comprised of new disposable tubing, or direct grab samples from the underdrain. All PFAS compounds were non-detect. This indicates the equipment used for PFAS underdrain sampling is PFAS free, and also indicates acceptable sampling and laboratory procedures for PFAS underdrain samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC PFAS Field Blank sample was poured on-site by WHEM the day PFAS underdrain samples were collected. All PFAS compounds were non-detect. This indicates WHEM personnel, and the ambient environment were free of PFAS compounds, and also indicates acceptable sampling and laboratory procedures for PFAS underdrain samples in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

Leachate Samples, QA/QC for VOCs:
In May 2021, two QA/QC Leachate Trip Blank samples were poured by WHEM from deionized water provided by Endyne, Inc., which were stored in the same coolers as the individual leachate cell samples, and leachate AST sample. VOC compounds were non-detected. This indicates

acceptable sampling and laboratory procedures for VOCs in leachate samples in the May 2021 sampling round.

Leachate AST Samples, QAQC for PFAS:
In May 2021 one QA/QC PFAS Trip Blank sample was provided by Alpha Analytical for the cooler containing PFAS leachate AST sample. All PFAS compounds were non-detect. This indicates acceptable sampling and laboratory procedures for the PFAS leachate sample in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

In May 2021, one QA/QC PFAS Field Blank sample was poured on-site by WHEM the day the PFAS leachate AST sample was collected. All PFAS compounds were non-detect. This indicates WHEM personnel, and the ambient environment were free of PFAS compounds, and also indicates acceptable sampling and laboratory procedures for PFAS leachate AST sample in the May 2021 sampling round. See the summary table in Appendix 1; laboratory results are in Appendix 2.

VII. GROUNDWATER DEPTHS, ELEVATIONS and FLOW DIRECTIONS

Depths to groundwater were measured in all groundwater monitoring wells (but not the drinking water wells). Water levels were generally higher overall in May 2021 compared to the October 2020 sampling event. A summary table of the May 2021 groundwater elevations is included in Appendix 1, page 299. Tables and graphs of these measurements, showing all historic groundwater elevation data for each monitoring well, are included in Appendix 1, pages 300-333.

A groundwater elevation contour map, showing estimated horizontal groundwater flow directions in the surficial materials, is included in Appendix 1, page 2. This contour map is created by WHEM using water level data only from shallow surficial wells, in conjunction with surface water sampling elevations where available and appropriate. Water level data from bedrock wells and deep surficial wells are generally not used to create this map, since those data may not reflect the water table elevations at those locations. In May 2021, shallow surficial groundwater flow paths were generally to the west and northwest in the vicinity of lined Phases III and IV; generally to the north in the vicinity of lined Phase II; and generally to the northwest, north and northeast in the vicinity of lined Phase I and Unlined Areas A&B. The Phase VI underdrain appears to be influencing groundwater flow directions immediately to its west (down-gradient), as would be expected: groundwater in the surficial monitoring wells west of Phase VI are 27 ft. to 49 ft. higher in elevation than the Phase VI Cell 1 underdrain sump.

VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

General:
1. Sampling of groundwater, surface water and underdrain samples were collected by WHEM from 5/3/21 through 5/11/21, and leachate samples were collected on 5/18/21.
2. Sampling was done in accordance with Conditions 67, 68, 69, 70 and 71 of the issued *Solid Waste Management Facility Certification,* (effective October 12, 2018).
3. Groundwater, surface water, underdrains, and leachate samples were analyzed by Endyne, Inc., of Williston, Vermont, or their sub-contracted certified laboratories if needed.
4. Groundwater PFAS, surface water PFAS, underdrain PFAS and leachate AST PFAS samples were analyzed by Alpha Analytical.

5. All monitoring wells were successfully sampled in May 2021 via WHEM's low-flow sampling SOP (except the three non-potable water supply wells, which were grab-sampled as usual, and one monitoring well with insufficient water). As per the SOP, all monitoring wells were field-measured for depth to water; and temperature, specific conductance, DO, pH, ORP and turbidity readings were obtained until readings stabilized (or after one hour of data collection; whichever comes first), and samples were then collected.
6. Method(s) of Reporting Trends in Water Quality Data: Trends are stated for the four broad categories of indicator parameters, inorganics [including metals], VOCs, and PFAS.
7. Trends in concentrations are stated two ways:
   - In each category, the trends in concentrations are estimated by visually comparing the values for this current round of sampling to the previous round of sampling [as agreed by K. Kathan, VTDEC Solid Waste Program, 3/03/2015);
   - Five-year trends in groundwater concentrations are visually estimated from the graphs, only for parameters which exceed GESs for at least half of the latest 5-year period [per approved updated Water Quality Monitoring Program, 2/14/2019]. The 5-year period for this current report is the period from May 2017 to May 2021. Some graphs show less than 5 years of data, because that is all that is available.

Groundwater Summary:

1. ***Up-gradient or Cross-Gradient of Lined and Unlined Landfills (17 Monitoring Wells):***

Indicator parameters showed *downward trends* in BRW-4S, G-7D, G-9D, G-11D and G-26D; *upward trends* were noted in 705, BRW-3S and DW-30616 Maintenance; and *mixed trends* were noted in 409, 706, BRW-3D, BRW-5S, E-3, G-10DR, G-26BR, DW-21 Office, and DW-36516 (St. Onge House and Barn (2005).

Inorganic compounds including Metals showed *downward trends* in 409, 705, 706, BRW-3D, BRW-4S, G-7D, G-9D, G-10DR, G-26BR, G-26D, DW-21 Office, and DW-30616 Maintenance; *upward trends* were noted in BRW-3S, E-3, G-11D and DW-36516 (St. Onge House and Barn (2005); and *mixed trends* were noted in BRW-5S.

Chromium was detected at the highest concentration in the past 3.5-year range in the following:
- G-11: Chromium, Total [15.2 ug/L; GES = 100 ug/L]; it is below the GES.

Chloride was detected at the highest concentration in the past 5-year range in the following:
- DW-30616 Maintenance: Chloride, Total [19 mg/L]; it has no GES;
- 706: Chloride, Total [44.0 mg/L]; it has no GES.

Iron was detected at the highest concentration in the past 5-year range in the following:
- BRW-5S: Iron, Dissolved [19 mg/L]; it has no GES;
- DW-36516 (St. Onge House and Barn (2005): Iron, Total [0.240 mg/L]; it has no GES.

Manganese was detected at the highest concentration in the past 2–5-year range in the following:
- G-10DR: Manganese, Dissolved [0.180 mg/L; GES = 0.300 mg/L]; it is below the GES;
- DW-36516 St. Onge House and Barn; 2005 bedrock water supply well): Manganese, Total [0.140 mg/L] and Dissolved [0.100 mg/L] [GES = 0.300 mg/L]; it is below the GES.

COD was detected at the highest concentration in the past 5-year range in the following:
- 706: COD [380 mg/L]; it has no GES;
- BRW-3S: COD [37 mg/L]; it has no GES.

Zinc was detected for the first time in the following:
- DW-36516 (St. Onge House and Barn (2005): Zinc, Total [0.029 mg/L]; it has no GES.

VOCs were non-detected in all up-gradient or cross gradient monitoring wells, as is generally typical usual.

PFAS were sampled in the following wells from this group: BRW-3S, BRW-3D, BRW-4S and BRW-5S. All wells were stable, non-detected for PFAS.

2. ***Between Lined and Unlined Landfills (1 Well):*** There is one compliance monitoring well (F1) between the lined and Unlined landfills. In general, indicator parameters trended up, metals were mixed, and VOCs trended down in May 2021 compared to the previous round.

   Iron was detected at the highest concentration in the past 5-year range:
   - FI: Iron, Dissolved [9.3 mg/L]; it has no GES.

   Sodium was detected at the highest concentration in the past 5-year range:
   - FI: Sodium, Total [94 mg/L]; it has no GES.

PFAS is not required.

3. ***Down-gradient of Unlined Areas A & B (9 Monitoring Wells):***

Indicator parameters showed *downward trends* in B1 and BRW-2R; *upward trends* were noted in A1, BRW-1, D2 and P8; and *mixed trends* were noted in and 412R, D1R and P2R-R.

Inorganic compounds including Metals, showed *downward trends* in P2R-R and P8; *upward trends* were noted in 412R, A1, B1, BRW-1, BRW-2R and D1R; and *mixed trends* were noted in. D2.

Arsenic was detected at the highest concentration in the past 3-year range in the following:
- D1R: Arsenic, Dissolved [16.5 ug/L] [GES = 10 ug/L]; it is above the GES;
- D2: Arsenic, Dissolved [6,580 mg/L] [GES = 10 ug/L]; it is above the GES

Iron was detected at the highest concentration in the past 5-year range in the following:
- 412R: Iron, Dissolved [13 mg/L]; it has no GES;
- A1: Iron, Total [7.8 mg/L]; it has no GES.

Nickel was detected at the highest concentration in the past 3-year range in the following:
- D2: Nickel, Dissolved [321 ug/L] [GES = 100 ug/L]; it is above the GES.

Manganese was detected at the highest concentration in the past 5-year range in the following:
- A1: Manganese, Total [0.730 mg/L] [GES = 0.300 mg/L]; it is above the GES.

Chloride was detected at the highest concentration in the past 5-year range in the following:
- 412R: Chloride, Total [27 mg/L]; it has no GES.

VOCs were non-detected in 412R, B1, BRW-1, BRW-2R, D1R, and P8; downward trends were noted in D2 and P2R-R; and upward trends were noted in A1.

PFAS was sampled in the following wells from this group: BRW-1, BRW-2R and P2R-R. An *upward trend* was noted in P2R-R, the two other sampled wells were non-detected in May 2021, as has been the case since PFAS sampling began.

- P2R-R PFAS: The sum of the five VT-regulated PFAS exceeded the GES [81.1 ng/L; GES = 20 ng/L], and *trended slightly up* in May 2021 compared to October 2020; Graph: 2-year trend is down, then stable.

4. ***Down-gradient of lined landfills, and not impacted by Unlined Areas A & B (10 wells):***

Indicator parameters showed *downward trends* in G-12BR and G-12S, *upward trends* were noted in 703, and *mixed trends* were noted in 103, 805M, E1, E2, G-27D, G-27S and P6.

Inorganic compounds including Metals, showed *downward trends* in 103, 703, 805M, E2, G-12BR, G-12S, G-27D and G-27S; *upward trends* in P6, and *mixed trends* were noted in E1.

Arsenic was detected at the highest concentration in the past 4-year range in the following:
- 805M: Arsenic, Dissolved [18.3 ug/L] [GES = 10 ug/L]; it is above the GES

VOCs showed *downward trends* in 103, and all other down-gradient monitoring wells were non-detected, as usual.

PFAS was sampled in the following wells from this group: E1, E2, G-12S, and P6. *An upward trend* was noted in E1, with the sum of the five VT-regulated PFAS being non-detected in the other three wells.

- E1 PFAS: The sum of the five VT-regulated PFAS was far below the GES [3.61 ng/L; GES = 20 ng/L]. The sum trended very slightly up in May 2021 compared to October 2020, but the overall 3-year trend is down.

5. ***Preliminary Statistical Analysis of Cause and Significance:***

Upgradient or cross-gradient of lined and unlined landfills (17 wells): Total and dissolved arsenic and/or total and dissolved manganese levels statistically exceed GESs in five (5) of these wells: 705, BRW-3D, BRW-5S, E-3 and G-9D.

Between lined and unlined landfill (1 well): Total and dissolved arsenic and total and dissolved manganese levels statistically exceed GESs in this one well: F1.

Downgradient of Unlined Areas A & B (9 wells): Total and dissolved arsenic, and/or total and dissolved manganese, and/or total and dissolved nickel levels statistically exceed GESs in eight (8) of these wells: 412R, A1, B1, BRW-1, D1R, D2, P2R-R, and P8.

Downgradient of lined landfills, and not impacted by Unlined Areas A & B (10 wells): Total and dissolved arsenic and/or total and dissolved manganese levels statistically exceed GESs in five (5) of these wells: 703, 805M, E2, G-27S and P6.

- These metals are common naturally-occurring compounds in Vermont groundwater. However, the standards exceedances are generally greater in magnitude in the down-gradient wells, reflecting impacts from the unlined landfill and/or impacts from changes in the redox regime as groundwater travels the long distances beneath the lined phases.
- The statistical exceedances of GESs for organic compounds (acetone, benzene, 2-butanone and/or vinyl chloride this round) in F1 (between landfills), and A1, D2 and P2R-R (downgradient of Unlined Areas A & B), and of the GES for the five VT-regulated PFAS in P2R-R are likely the result of migration of leachate from the Unlined landfill Areas A & B.

6. Depths to groundwater were measured in all groundwater monitoring wells (but not the drinking water wells). Water levels were generally higher overall in May 2021 compared to the October 2020 sampling event. In May 2021, shallow surficial groundwater flow paths were generally to the west and northwest in the vicinity of lined Phases III and IV; generally to the north in the vicinity of lined Phase II; and generally to the northwest, north and northeast in the vicinity of lined Phase I and Unlined Areas A&B. The Phase VI underdrain appears to be influencing groundwater flow directions immediately to its west (down-gradient), as would be expected: groundwater in the surficial monitoring wells west of Phase VI are 27 ft. to 49 ft. higher in elevation than the Phase VI Cell 1 underdrain sump.

7. No drinking water supplies are impacted by the NEWSVT facility.

Surface Water Summary:

1. There are 12 surface water sampling stations on streams, ditches and rivers at and near the NEWSVT facility; three (3) upstream or side-gradient locations: SW-1 Black River Upstream, SW-3 Landfill Brook East, and SW-9 Southwest Stream #1, and nine (9) downstream locations: SW-2 Black River Downstream, SW-4 North Landfill Stream, SW-5 St. Onge Ditch, SW-6 Landfill Brook East, SW-7A Western Stream, SW-8 Wetland Below UD-1, 2, SW-10 Southwest Stream #2, SW-11 Southwest Stream #3 and SW-12 Southwest Stream #4.

2. Surface water quality results are compared to the Vermont Water Quality Standards (VWQS); effective 1/15/17, Appendix C, for Protection of Human Health (Consumption of Organisms only), and Protection of Aquatic Biota, Average Acceptable Concentration (AAC) Chronic Criteria. If no Human Health standard is shown, the standard for Protection of Aquatic Biota, Chronic Criteria is used or calculated using formulas provided in Appendix D and E of the VWQS. Dissolved concentrations of select metals (cadmium, chromium, copper, lead, nickel,

and zinc) are estimated using laboratory-reported total metals concentrations and conversion factors provided in Appendix D of the VWQS. Both total and dissolved concentrations are now included in the data tables. Some metals are non-detected; their detection limits are higher than their water quality standards, so the actual concentrations of these metals cannot be compared to standards.

3. ***PFAS in Surface Waters:*** PFAS analysis is required only at SW-8, during the semi-annual sampling events in May and October. There are no Vermont standards for PFAS in surface water.
4. ***Upstream or side-gradient Surface Water locations:***
   Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in SW-1, and *upward trends* in SW-3, and SW-9.
   All VOCs and SVOCs were non-detected in all upstream or side-gradient surface water locations.
5. ***Downstream Surface Water locations:***
   Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in SW-2, SW-6, SW-8, SW-10 and SW-11, and *upward trends* in and SW-4, SW-5, SW-7A and SW-12.
   Two inorganic compounds were detected at their highest concentrations in the historic range:

   - SW-4: Sodium [51 mg/L]. It is routinely detected; it has no VWQS;
   - SW-6: Sodium [70 mg/L]. It is routinely detected; it has no VWQS;
   - SW-7A: Sodium [6.5 mg/L]. It is routinely detected; it has no VWQS;
   - SW-7A: Chloride [14 mg/L; VWQS = 230 mg/L]. It is routinely detected and is well below the VWQS.

   PFAS:

   - SW-8 PFAS: There are no Vermont standards for PFAS in surface water. PFAS trended up in May 2021 at its highest concentration to date, compared to the previous round in October 2020, with nine (9) PFAS compounds reported at concentrations ranging from 2.11 ng/L to 81.1 ng/L. Fifteen (15) other PFAS were non-detected.

   VOCs were non-detected in all sampled downstream surface water locations.
   SVOCs were non-detected in all sampled downstream surface water locations.

Underdrains Summary:

1. Each of the lined landfill phases (Phases 1, 2, 3, 4 and 6) has an independent underdrain system of perforated pipes bedded in high-permeability drainage sand and stone located either in trenches or a continuous blanket beneath or within the engineered soil drainage system: Underdrain Outlet Phase I (UD-1), Underdrain Outlet Phase 2 (UD-2), Underdrain Outlet Phase 3 (UD-3), Underdrain Outlet Phase 4 (UD-4) and Underdrain Outlet Phase 6 [UD-6].
2. Status of UD-1 and UD-2: Beginning on August 20, 2019, the discharges from UD-1 and UD-2 are no longer released to the slope below Phase 2. These discharges have been contained, and are managed as leachate by being pumped to the leachate holding tank. The flow rates from UD-1 and UD-2 cannot be measured beginning October 2019 because those flows now discharge into their own very deep manholes, in which it is not possible to measure their discharge rates safely or accurately. From these two manholes, the flows are pumped into the leachate collection system. Using a peristaltic pump, individual samples are collected of the liquids in the manholes for UD-1 and UD-2.
3. Status of UD-3 and UD-4: The discharges from UD-3 and UD-4 are currently released to the ground surface at the outlets of the underdrain pipes. The flow rates from UD-3 and UD-4 are

accurately measured directly at these two discharge points using an empty calibrated container and stopwatch.

4. Treatment options for the discharge from UD-3 are currently being considered by NEWSVT and the VT DEC.
5. Status of UD-6: The discharge pipe for Underdrain 6 was installed in the late fall of 2020. Sampling and measurements of flow rates from UD-6 will begin after Phase VI is operational, with the October 2021 compliance sampling round.
6. The underdrain pipes are periodically flushed with high-pressure water. NEWSVT personnel reported that the underdrain pipes were last flushed during the second week of September 2020.
7. Underdrain water quality results are compared to the Vermont Water Quality Standards (VWQS); effective 1/15/17, Appendix C, for Protection of Human Health (Consumption of Organisms only), and Protection of Aquatic Biota, Average Acceptable Concentration (AAC) Chronic Criteria. If no Human Health standard is shown, the standard for Protection of Aquatic Biota, Chronic Criteria is used or calculated using formulas provided in Appendix D and E of the VWQS. Dissolved concentrations of select metals (cadmium, chromium, copper, lead, nickel, and zinc) are estimated using laboratory-reported total metals concentrations and conversion factors provided in Appendix D of the VWQS. Both total and dissolved concentrations are now included in the data tables. Some metals are non-detected; their detection limits are higher than their water quality standards, so the actual concentrations of these metals cannot be compared to standards.

   Inorganic compounds, which include Metals and Indicator Parameters, showed *downward trends* in UD-1, and *upward trends* in UD-2, UD-3 and UD-4.

   Two inorganic compounds were detected at their highest concentrations to date:
   - UD-3: Sodium [13.0 mg/L]; it is routinely detected and has no VWQS;
   - UD-4: Sodium [11.0 mg/L]; it is routinely detected and has no VWQS;
   - UD-4: Chloride [25 mg/L; VWQS = 230 mg/L]; it remains well below its VWQS.

   Temperature in UD-3:
   - The temperature in UD-3 was measured at 22.60 deg. C during sampling. The overall pattern of UD-3 temperature still appears to be rising, as it has since May 2001 (7.5 deg. C). The increase in UD-3 temperature roughly parallels the temperatures of the Phase III leachate, although the Phase III leachate temperatures have recently declined somewhat, after peaking in May 2016 (Phase III, Cell 1: 28.2 deg. C, Phase III, Cell 2: 27.7 deg. C).

   VOCs were non-detected in all underdrain locations.

   SVOCs were non-detected in all underdrain locations.
8. **PFAS:** PFAS has been analyzed since July 2019 in UD-1 and UD-2, and since September 2019 in UD-3 and UD-4. PFAS showed *downward trends* in UD-1 and UD-2, with PFAS detections not surprising given the proximity of Unlined Landfill Areas A & B to the underdrain collection systems beneath Phases I and II. PFAS an *upward trend* in UD-3, and stable very low-level detections in UD-4. While PFAS continue to be detected in all underdrains, no inorganic or organic indicators of landfill impacts are seen (VOCs and SVOCs are non-detected).
9. **PFAS in Underdrain trends:**
   - UD-1: PFAS trended down in May 2021 compared to the previous round in October 2020, with nine (9) PFAS compounds reported at concentrations ranging from 2.17 ng/L to 71.9 ng/L. Fifteen (15) other PFASs were non-detected. The overall 2-year PFAS trend in UD-1 is downward. This discharge is currently diverted into the leachate collection system.
   - UD-2: PFAS trended down in May 2021 compared to the previous round in October 2020 with seven (7) PFAS compounds reported, at concentrations ranging from 4.97 ng/L to

66.6 ng/L. Seventeen (17) other PFASs were non-detected. The overall 2-year PFAS trend in UD-2 is downward since May 2020. This discharge is currently diverted into the leachate collection system.

- UD-3: PFAS trended up in May 2021 compared to the previous round in October 2020, with six (6) PFAS compounds reported at concentrations ranging from 12.4 ng/L to 149 ng/L. Eighteen (18) other PFASs were non-detected. There is no clear PFAS trend in UD-3.
- UD-4: PFAS trended very slightly up in May 2021compared to the previous round in October 2020, with two (2) PFAS compounds reported at very low concentrations ranging from 2.40 ng/L to 3.20 ng/L. Twenty-two (22) other PFASs were non-detected. There overall 2-year PFAS trend in UD-4 is stable.

Leachate Summary:

1. At NEWSVT, there are currently seven (7) individual landfill cell leachate sampling locations, and the sampling location at the combined leachate above-ground storage tank (AST), as follows: Lined Phase I, Phase II, Phase II Cell 1, Phase III Cell 2, Phase IV Cell 1, Phase IV Cell 2, Phase IV Cells 3&4, and the combined AST. Leachate from Unlined Areas A & B is not collected, so it cannot be sampled.
2. Leachate from individual landfill cells: Each of the seven leachate pumping systems in the lined landfill cells has a separate pump station that allows the collection of discrete samples from both the primary and secondary leachate collection systems in each cell. For routine leachate sampling, samples are collected from the primary leachate collection systems in each lined cell.
3. Possible sampling of secondary leak detection system liquid: If any of the secondary leachate leak-detection systems have accumulation rates which have recently exceeded 20 gallons per acre per day, a grab sample from that cell's secondary detection system is also collected. For the May2021 sampling round, NEWSVT personnel notified WHEM that no sampling of any secondary leak-detection liquids was required.
4. Combined Leachate from the AST: As of the May 2021 sampling dates, leachate was stored in one AST. As part of the Phase VI expansion, a second AST was recently installed next to the initial AST. The liquid in the initial current AST that was sampled in May 2021 is a combination of Primary leachate (estimated by NEWSVT personnel at 95% +/- of tank contents), and Secondary detection-system liquids from all the phases and cells of the lined landfill, and the collected discharges from Underdrain 1 and 2. Pumping systems in the AST send its contents to the Leachate Load-Out Building for tanker-truck loading. Samples of this combined leachate in the AST were collected from the piping that is used to fill the leachate tanker trucks in the Leachate Load-Out Building.
5. Laboratory Analyses: The leachate samples are analyzed for total metals and other inorganics, volatile organics (by EPA Method 8260C), semi-volatile organics (by EPA 8270C), and the AST leachate is analyzed for PFAS [by modified Method 537]. The May 2021 trends were visually estimated in comparison to the previous sampling event.
6. Comparison to Vermont Toxicity Characteristics: The lab results for the May 2021 leachate samples indicate that NEWSVT leachate is not characterized as toxic, because none of the parameters tested exceed the Vermont Toxicity Characteristic (TC) concentrations (*Vermont Hazardous Waste Management Regulations; Toxicity Characteristic* (TC); Chapter 2, Table 1: Maximum Concentration of Contaminants for the Characteristic of Toxicity (December 16, 2016)).
7. Comparison to Guidelines for Accepting Landfill Leachate at Permitted Wastewater Treatment

Facilities [WWTFs]: Concentrations of PFOA and PFOS in the AST leachate are compared to the VTDEC *Guideline Levels for Accepting Landfill Leachate at Permitted WWTFs* [Memo: P. Laflamme & C. Schwer, 7/06/2017]. The May 2021 concentrations of PFOA and PFOS are far below the concentrations for which there are restrictions regarding where landfill leachate may be disposed, as has been the case since leachate sampling for PFAS began in January 2018.

8. Between the previous sampling event in October 2020 and this current May 2021 sampling event, solid waste was being placed in available slope-side airspaces across Phase 1, Phase II and Phase IV. Leachate from these cells drains to the individual sumps located in Phase I, Phase II and Phase IV Cells 1, 2, and 3+4. All 8 leachate sampling locations were successfully sampled in May 2021; no samples were required from the secondary leak-detection systems.

9. Leachate samples from the seven individual phases of the landfill showed values generally within historical ranges; there were no exceedances of the VT TCs.

Phase I Leachate, Primary: No metals or other inorganics, VOCS or SVOCs exceeded their TCs, as is typical; all are within historic ranges.

Phase II Leachate, Primary: No metals or other inorganics, VOCs or SVOCs exceeded their TCs, as is typical; all are within historic ranges.

Phase III Cell 1 Leachate, Primary: No metals or other inorganics or VOCs exceeded their TCs, as is typical, and SVOCs were non-detected; all are within historic ranges.

Phase III Cell 2 Leachate: Primary: No metals or other inorganics or VOCs exceeded their TCs, as is typical, and one SVOC was detected; all are within historic ranges.

Two metals were detected at their highest concentrations to date:

- Molybdenum, Total [0.012 mg/L]; this is its third low-level detection; it has no TC;
- Selenium, Total [0.0028 mg/L; TC = 1 mg/L]; this is its fourth low-level detection; and it remains well below the TC.

Phase IV Cell 1 Leachate, Primary: No metals or other inorganics, VOCs or SVOCs exceeded their TCs, as is typical; all are within historic ranges. Notable:

One metal was detected at its highest concentration to date:

- Arsenic, Total [1.21 mg/L; TC = 5 mg/L]; it is routinely detected, and remains well below the TC.

One metal was detected for the first time:

- Molybdenum, Total [0.011 mg/L]; this is a low-level detection; it has no TC.

One SVOC was detected for the first time:

- Anthracene [6.6 ug/L]; this is a low-level detection; it has no TC.

Three SVOCs were detected at their highest concentration to date:

- Fluoranthene [14.3 ug/L]; this is its second low-level detection; it has no TC;
- Phenanthrene [22.7 ug/L]; it is sporadically detected; it has no TC;
- Pyrene [9.2 ug/L]; this is its third low-level detection; it has no TC.

Phase IV Cell 2 Leachate, Primary: No metals or other inorganics, VOC or SVOCs exceeded their TCs, as is typical; all are within historic ranges. Notable:

One metal was detected at its highest concentration to date:

- Selenium, Total [0.0037 mg/L; TC = 1 mg/L]; this is its second low-level detection, and it remains well below the TC.

Phase IV Cell 3 & 4 Leachate, Primary: No metals or other inorganics, VOC or SVOCs exceeded their TCs, as is typical; all are within historic ranges. Notable:

One metal was detected at its highest concentration to date:

- Lead, Total [0.0326 mg/L; TC = 5 mg/L]; it is sporadically detected at low-level concentrations, and it remains well below the TC.

Combined Leachate Above-Ground Storage Tank: No metals or other inorganics, VOCs or SVOCs exceeded their TCs, as is typical; all are within historic ranges. Notable:

One metal was detected at its highest concentration to date:

- Vanadium, Total [0.061 mg/L]; it is sporadically detected, and has no TC.

One VOC was detected at its highest concentration to date:

- T-butanol [3,120 ug/L]; it is routinely detected, and has no TC.

PFAS compounds: PFAS compounds were detected in the leachate AST sample in May 2021, as expected. The concentrations of the two PFAS compounds that are regulated in Vermont landfill leachate [PFOA, PFOS] increased slightly in the May 2021 leachate AST sample when compared to the previous October 2020 sample, but where within their moderately-fluctuating historic ranges. The May 2021 concentrations of PFOA and PFOS in the AST leachate are far below the concentrations for which there are restrictions regarding where landfill leachate may be disposed (per 2017 VDEC guideline levels) as has been the case since leachate sampling for PFAS began in January 2018. Also, the sum of all detected PFAS compounds in the AST leachate in May 2021 [14 compounds, of 24 compounds analyzed] decreased, and is within the historic range.

- May 2021 PFOA: 1,790 ng/L = 1.5% of no-restrictions threshold;
- May 2021 PFOA: 220 ng/L = 22% of no-restriction threshold.

QA/QC Samples:

1. All QA/QC groundwater VOC, surface water VOC, underdrain VOC, leachate VOC, Equipment Blank VOC, PFAS trip blank, PFAS field blank and PFAS Equipment Blank samples were non-detected, indicating acceptable sampling, decontamination, and laboratory procedures for sampling in the May 2021 sampling round.
2. The lab results for groundwater Dup-1, Dup-2, Dup-3 and Dup-4 were all in close relation (concentrations in each duplicate pair had less than 45% relative differences), with the exception of COD values in duplicate 2 and duplicate 4. Upon inquiry to Endyne, personnel reviewed the COD data and concluded that QC all looked good for the batch, and no transcription or dilution errors were found; the reason for the discrepancy between the samples and duplicates is unknown. All other values were in close relation, which indicates acceptable sampling and laboratory procedures for groundwater samples in the May 2021 sampling round.

Based on this Report including the Summary and Conclusions above, WHEM makes the following Recommendations:

1. Monitoring and reporting will continue to be conducted in accordance with Conditions 67, 68, 69, 70, 71 and 83 of the issued *Solid Waste Management Facility Certification* ("Solid Waste Cert."), effective October 12, 2018. The next scheduled full-site water quality monitoring event will be in October 2021

2. During future sampling events, efforts will continue to minimize collection of high silt/sand groundwater samples, such as bailing known silty wells first, as soon as we arrive on-site, if required. This will allow the wells to settle for as long as possible and these samples will be collected last.

Sincerely,

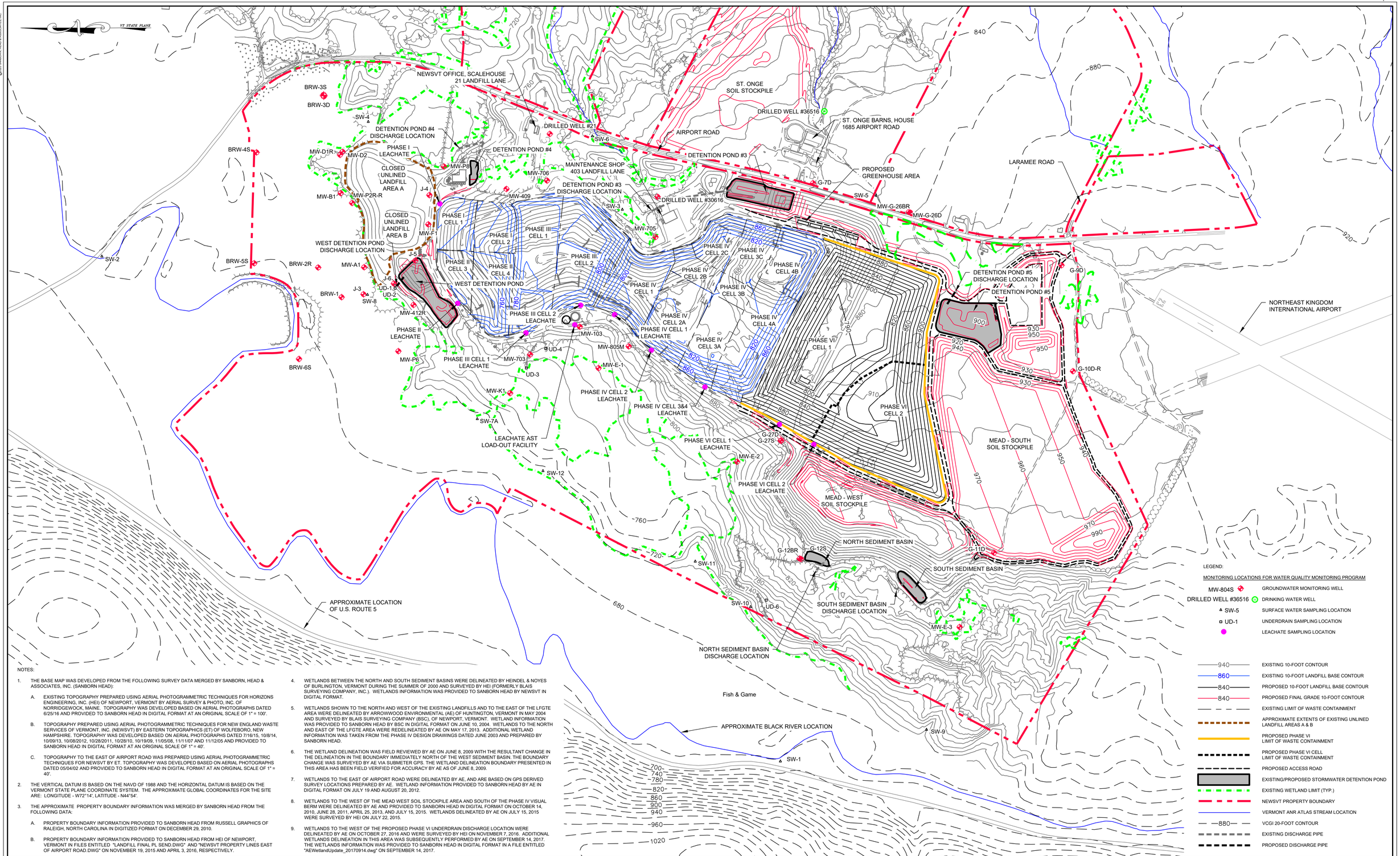
Wendy Shellito (phone x103)
Project Scientist
wshellito@waiteenv.com

Craig Heindel, C.P.G. (phone x102)
Senior Hydrogeologist
cheindel@gmavt.net

U:\PROJECTS - WHEM\NEWSVT\SEMIANNUAL WQ REPORTS\SEMI 5-2021\NEWSVT May 2021 FINAL.docx or pdf

APPENDIX 1

TABLE OF CONTENTS



NOTES:

1. THE BASE MAP WAS DEVELOPED FROM THE FOLLOWING SURVEY DATA MERGED BY SANBORN, HEAD & ASSOCIATES, INC. (SANBORN HEAD):
   A. EXISTING TOPOGRAPHY PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR HORIZONS ENGINEERING, INC. (HEI) OF NEWPORT, VERMONT BY AERIAL SURVEY & PHOTO, INC. OF NORRIDGEWOCK, MAINE. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 6/25/16 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 100'.
   B. TOPOGRAPHY PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR NEW ENGLAND WASTE SERVICES OF VERMONT, INC. (NEWSVT) BY EASTERN TOPOGRAPHICS (ET) OF WOLFEBORO, NEW HAMPSHIRE. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 7/16/15, 10/8/14, 10/09/13, 10/08/2012, 10/28/2011, 10/28/10, 10/19/09, 11/05/08, 11/11/07 AND 11/12/05 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 40'.
   C. TOPOGRAPHY TO THE EAST OF AIRPORT ROAD WAS PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR NEWSVT BY ET. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 05/04/02 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 40'.
2. THE VERTICAL DATUM IS BASED ON THE NAVD OF 1988 AND THE HORIZONTAL DATUM IS BASED ON THE VERMONT STATE PLANE COORDINATE SYSTEM. THE APPROXIMATE GLOBAL COORDINATES FOR THE SITE ARE: LONGITUDE - W72°14', LATITUDE - N44°54'.
3. THE APPROXIMATE PROPERTY BOUNDARY INFORMATION WAS MERGED BY SANBORN HEAD FROM THE FOLLOWING DATA:
   A. PROPERTY BOUNDARY INFORMATION PROVIDED TO SANBORN HEAD FROM RUSSELL GRAPHICS OF RALEIGH, NORTH CAROLINA IN DIGITIZED FORMAT ON DECEMBER 29, 2010.
   B. PROPERTY BOUNDARY INFORMATION PROVIDED TO SANBORN HEAD FROM HEI OF NEWPORT, VERMONT IN FILES ENTITLED "LANDFILL FINAL PL SEND.DWG" AND "NEWSVT PROPERTY LINES EAST OF AIRPORT ROAD.DWG" ON NOVEMBER 19, 2015 AND APRIL 3, 2016, RESPECTIVELY.
4. WETLANDS BETWEEN THE NORTH AND SOUTH SEDIMENT BASINS WERE DELINEATED BY HEINDEL & NOYES OF BURLINGTON, VERMONT DURING THE SUMMER OF 2000 AND SURVEYED BY HEI (FORMERLY BLAIS SURVEYING COMPANY, INC.). WETLANDS INFORMATION WAS PROVIDED TO SANBORN HEAD BY NEWSVT IN DIGITAL FORMAT.
5. WETLANDS SHOWN TO THE NORTH AND WEST OF THE EXISTING LANDFILLS AND TO THE EAST OF THE LFGTE AREA WERE DELINEATED BY ARROWWOOD ENVIRONMENTAL (AE) OF HUNTINGTON, VERMONT IN MAY 2004 AND SURVEYED BY BLAIS SURVEYING COMPANY (BSC), OF NEWPORT, VERMONT. WETLAND INFORMATION WAS PROVIDED TO SANBORN HEAD BY BSC IN DIGITAL FORMAT ON JUNE 10, 2004. WETLANDS TO THE NORTH AND EAST OF THE LFGTE AREA WERE REDELINEATED BY AE ON MAY 17, 2013. ADDITIONAL WETLAND INFORMATION WAS TAKEN FROM THE PHASE IV DESIGN DRAWINGS DATED JUNE 2003 AND PREPARED BY SANBORN HEAD.
6. THE WETLAND DELINEATION WAS FIELD REVIEWED BY AE ON JUNE 8, 2009 WITH THE RESULTANT CHANGE IN THE DELINEATION IN THE BOUNDARY IMMEDIATELY NORTH OF THE WEST SEDIMENT BASIN. THE BOUNDARY CHANGE WAS SURVEYED BY AE VIA SUBMETER GPS. THE WETLAND DELINEATION BOUNDARY PRESENTED IN THIS AREA HAS BEEN FIELD VERIFIED FOR ACCURACY BY AE AS OF JUNE 8, 2009.
7. WETLANDS TO THE EAST OF AIRPORT ROAD WERE DELINEATED BY AE, AND ARE BASED ON GPS DERIVED SURVEY LOCATIONS PREPARED BY AE. WETLAND INFORMATION PROVIDED TO SANBORN HEAD BY AE IN DIGITAL FORMAT ON JULY 19 AND AUGUST 20, 2012.
8. WETLANDS TO THE WEST OF THE MEAD WEST SOIL STOCKPILE AREA AND SOUTH OF THE PHASE IV VISUAL BERM WERE DELINEATED BY AE AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT ON OCTOBER 14, 2010, JUNE 28, 2011, APRIL 25, 2013, AND JULY 15, 2015. WETLANDS DELINEATED BY AE ON JULY 15, 2015 WERE SURVEYED BY HEI ON JULY 22, 2015.
9. WETLANDS TO THE WEST OF THE PROPOSED PHASE VI UNDERDRAIN DISCHARGE LOCATION WERE DELINEATED BY AE ON OCTOBER 27, 2016 AND WERE SURVEYED BY HEI ON NOVEMBER 7, 2016. ADDITIONAL WETLANDS DELINEATION IN THIS AREA WAS SUBSEQUENTLY PERFORMED BY AE ON SEPTEMBER 14, 2017. THE WETLANDS INFORMATION WAS PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT IN A FILE ENTITLED "AEWetlandUpdate_20170914.dwg" ON SEPTEMBER 14, 2017.

LEGEND:

MONITORING LOCATIONS FOR WATER QUALITY MONITORING PROGRAM

- MW-804S — GROUNDWATER MONITORING WELL
- DRILLED WELL #36516 — DRINKING WATER WELL
- SW-5 — SURFACE WATER SAMPLING LOCATION
- UD-1 — UNDERDRAIN SAMPLING LOCATION
- LEACHATE SAMPLING LOCATION
- 940 — EXISTING 10-FOOT CONTOUR
- 860 — EXISTING 10-FOOT LANDFILL BASE CONTOUR
- 840 — PROPOSED 10-FOOT LANDFILL BASE CONTOUR
- 840 — PROPOSED FINAL GRADE 10-FOOT CONTOUR
- EXISTING LIMIT OF WASTE CONTAINMENT
- APPROXIMATE EXTENTS OF EXISTING UNLINED LANDFILL AREAS A & B
- PROPOSED PHASE VI LIMIT OF WASTE CONTAINMENT
- PROPOSED PHASE VI CELL LIMIT OF WASTE CONTAINMENT
- PROPOSED ACCESS ROAD
- EXISTING/PROPOSED STORMWATER DETENTION POND
- EXISTING WETLAND LIMIT (TYP.)
- NEWSVT PROPERTY BOUNDARY
- VERMONT ANR ATLAS STREAM LOCATION
- 880 — VCGI 20-FOOT CONTOUR
- EXISTING DISCHARGE PIPE
- PROPOSED DISCHARGE PIPE

SANBORN HEAD

GRAPHICAL SCALE
350' 175' 0 350' 700'

NO.	DATE	DESCRIPTION	BY

DRAWN BY: L. TRACY
DESIGNED BY: J. GRACE
REVIEWED BY: B. BEAUDOIN
PROJECT MGR: T. PETIT
PIC: B. BEAUDOIN
DATE: JUNE 2020

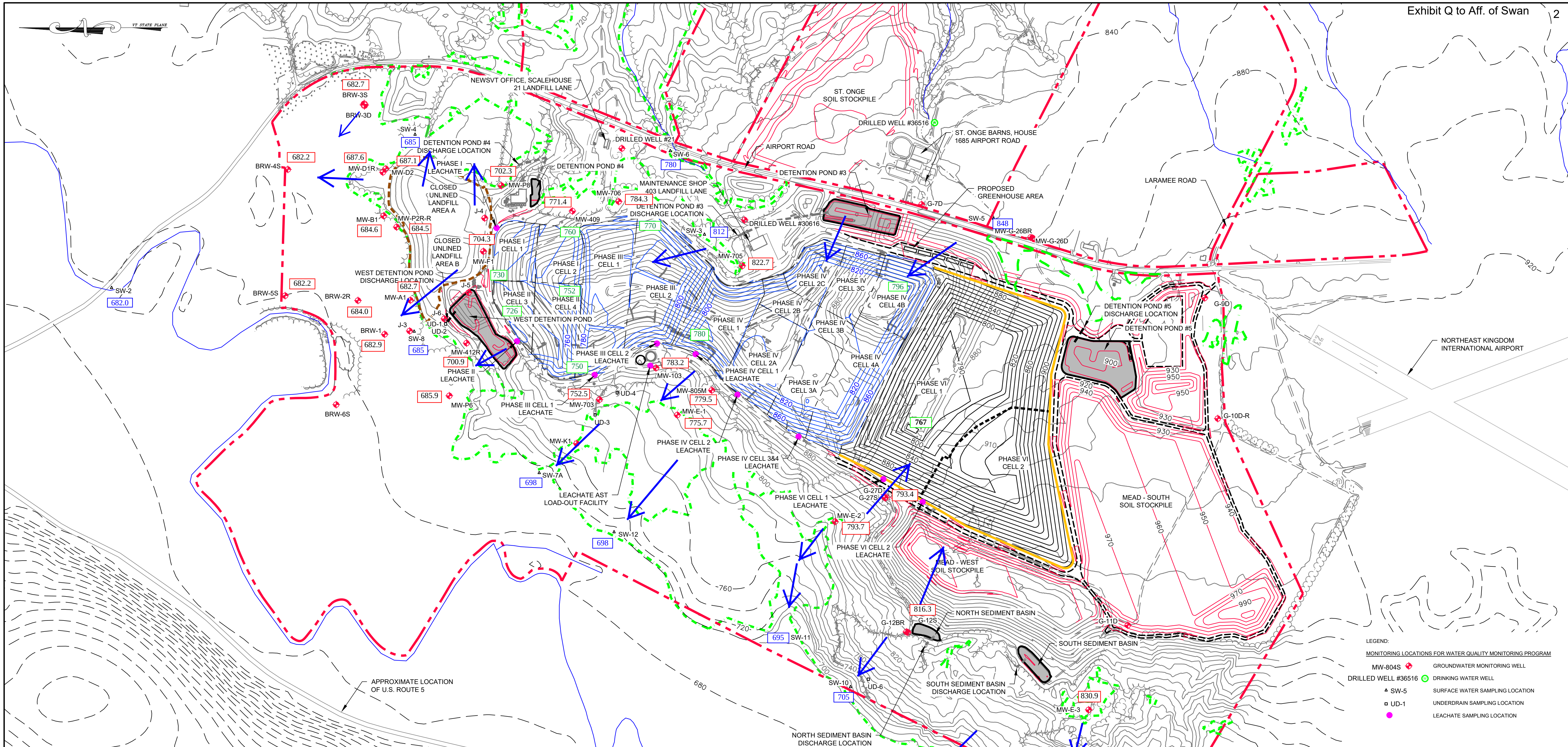
NEW ENGLAND WASTE SERVICES OF VERMONT, INC.
COVENTRY, VERMONT

PROJECT NUMBER: 1166.20

ENVIRONMENTAL MONITORING PLAN
UNLINED LANDFILLS A & B, PHASES I, II, III, IV, & VI

FIGURE NUMBER: 1

Exhibit Q to Aff. of Swan 2



VT STATE PLANE
NEWSVT OFFICE, SCALEHOUSE
21 LANDFILL LANE
ST. ONGE
SOIL STOCKPILE
DRILLED WELL #36516
ST. ONGE BARNS, HOUSE
1685 AIRPORT ROAD
AIRPORT ROAD
DRILLED WELL #21
DETENTION POND #4
DISCHARGE LOCATION
DETENTION POND #4
DETENTION POND #3
MAINTENANCE SHOP
403 LANDFILL LANE
DETENTION POND #3
DISCHARGE LOCATION
DRILLED WELL #30616
PROPOSED
GREENHOUSE AREA
LARAMEE ROAD
CLOSED
UNLINED
LANDFILL
AREA A
CLOSED
UNLINED
LANDFILL
AREA B
PHASE I
LEACHATE
WEST DETENTION POND
DISCHARGE LOCATION
WEST DETENTION POND
PHASE II
LEACHATE
PHASE III CELL 2
LEACHATE
PHASE III CELL 1
LEACHATE
PHASE IV CELL 1
LEACHATE
PHASE IV CELL 2
LEACHATE
PHASE IV CELL 3&4
LEACHATE
LEACHATE AST
LOAD-OUT FACILITY
PHASE VI CELL 1
LEACHATE
PHASE VI CELL 2
LEACHATE
DETENTION POND #5
DISCHARGE LOCATION
DETENTION POND #5
NORTHEAST KINGDOM
INTERNATIONAL AIRPORT
MEAD - SOUTH
SOIL STOCKPILE
MEAD - WEST
SOIL STOCKPILE
NORTH SEDIMENT BASIN
SOUTH SEDIMENT BASIN
SOUTH SEDIMENT BASIN
DISCHARGE LOCATION
NORTH SEDIMENT BASIN
DISCHARGE LOCATION
APPROXIMATE LOCATION
OF U.S. ROUTE 5
Fish & Game
APPROXIMATE BLACK RIVER LOCATION

NOTES:

1. THE BASE MAP WAS DEVELOPED FROM THE FOLLOWING SURVEY DATA MERGED BY SANBORN, HEAD & ASSOCIATES, INC. (SANBORN HEAD):

   A. EXISTING TOPOGRAPHY PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR HORIZONS ENGINEERING, INC. (HEI) OF NEWPORT, VERMONT BY AERIAL SURVEY & PHOTO, INC. OF NORRIDGEWOCK, MAINE. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 6/25/16 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 100'.

   B. TOPOGRAPHY PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR NEW ENGLAND WASTE SERVICES OF VERMONT, INC. (NEWSVT) BY EASTERN TOPOGRAPHICS (ET) OF WOLFEBORO, NEW HAMPSHIRE. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 7/16/15, 10/8/14, 10/09/13, 10/08/2012, 10/28/2011, 10/28/10, 10/19/09, 11/05/08, 11/11/07 AND 11/12/05 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 40'.

   C. TOPOGRAPHY TO THE EAST OF AIRPORT ROAD WAS PREPARED USING AERIAL PHOTOGRAMMETRIC TECHNIQUES FOR NEWSVT BY ET. TOPOGRAPHY WAS DEVELOPED BASED ON AERIAL PHOTOGRAPHS DATED 05/04/02 AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT AT AN ORIGINAL SCALE OF 1" = 40'.

2. THE VERTICAL DATUM IS BASED ON THE NAVD OF 1988 AND THE HORIZONTAL DATUM IS BASED ON THE VERMONT STATE PLANE COORDINATE SYSTEM. THE APPROXIMATE GLOBAL COORDINATES FOR THE SITE ARE: LONGITUDE - W72°14', LATITUDE - N44°54'.

3. THE APPROXIMATE PROPERTY BOUNDARY INFORMATION WAS MERGED BY SANBORN HEAD FROM THE FOLLOWING DATA:

   A. PROPERTY BOUNDARY INFORMATION PROVIDED TO SANBORN HEAD FROM RUSSELL GRAPHICS OF RALEIGH, NORTH CAROLINA IN DIGITIZED FORMAT ON DECEMBER 29, 2010.

   B. PROPERTY BOUNDARY INFORMATION PROVIDED TO SANBORN HEAD FROM HEI OF NEWPORT, VERMONT IN FILES ENTITLED "LANDFILL FINAL PL SEND.DWG" AND "NEWSVT PROPERTY LINES EAST OF AIRPORT ROAD.DWG" ON NOVEMBER 19, 2015 AND APRIL 3, 2016, RESPECTIVELY.

4. WETLANDS BETWEEN THE NORTH AND SOUTH SEDIMENT BASINS WERE DELINEATED BY HEINDEL & NOYES OF BURLINGTON, VERMONT DURING THE SUMMER OF 2000 AND SURVEYED BY HEI (FORMERLY BLAIS SURVEYING COMPANY, INC.). WETLANDS INFORMATION WAS PROVIDED TO SANBORN HEAD BY NEWSVT IN DIGITAL FORMAT.

5. WETLANDS SHOWN TO THE NORTH AND WEST OF THE EXISTING LANDFILLS AND TO THE EAST OF THE LFGTE AREA WERE DELINEATED BY ARROWWOOD ENVIRONMENTAL (AE) OF HUNTINGTON, VERMONT IN MAY 2004 AND SURVEYED BY BLAIS SURVEYING COMPANY (BSC), OF NEWPORT, VERMONT. WETLAND INFORMATION WAS PROVIDED TO SANBORN HEAD BY BSC IN DIGITAL FORMAT ON JUNE 10, 2004. WETLANDS TO THE NORTH AND EAST OF THE LFGTE AREA WERE REDELINEATED BY AE ON MAY 17, 2013. ADDITIONAL WETLAND INFORMATION WAS TAKEN FROM THE PHASE IV DESIGN DRAWINGS DATED JUNE 2003 AND PREPARED BY SANBORN HEAD.

6. THE WETLAND DELINEATION WAS FIELD REVIEWED BY AE ON JUNE 8, 2009 WITH THE RESULTANT CHANGE IN THE DELINEATION IN THE BOUNDARY IMMEDIATELY NORTH OF THE WEST SEDIMENT BASIN. THE BOUNDARY CHANGE WAS SURVEYED BY AE VIA SUBMETER GPS. THE WETLAND DELINEATION BOUNDARY PRESENTED IN THIS AREA HAS BEEN FIELD VERIFIED FOR ACCURACY BY AE AS OF JUNE 8, 2009.

7. WETLANDS TO THE EAST OF AIRPORT ROAD WERE DELINEATED BY AE, AND ARE BASED ON GPS DERIVED SURVEY LOCATIONS PREPARED BY AE. WETLAND INFORMATION PROVIDED TO SANBORN HEAD BY AE IN DIGITAL FORMAT ON JULY 19 AND AUGUST 20, 2012.

8. WETLANDS TO THE WEST OF THE MEAD WEST SOIL STOCKPILE AREA AND SOUTH OF THE PHASE IV VISUAL BERM WERE DELINEATED BY AE AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT ON OCTOBER 14, 2010, JUNE 28, 2011, APRIL 25, 2013, AND JULY 15, 2015. WETLANDS DELINEATED BY AE ON JULY 15, 2015 WERE SURVEYED BY HEI ON JULY 22, 2015.

9. WETLANDS TO THE WEST OF THE PROPOSED PHASE VI UNDERDRAIN DISCHARGE LOCATION WERE DELINEATED BY AE ON OCTOBER 27, 2016 AND WERE SURVEYED BY HEI ON NOVEMBER 7, 2016. ADDITIONAL WETLANDS DELINEATION IN THIS AREA WAS SUBSEQUENTLY PERFORMED BY AE ON SEPTEMBER 14, 2017. THE WETLANDS INFORMATION WAS PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT IN A FILE ENTITLED "AEWetlandUpdate_20170914.dwg" ON SEPTEMBER 14, 2017.

LEGEND:

MONITORING LOCATIONS FOR WATER QUALITY MONITORING PROGRAM

- MW-804S — GROUNDWATER MONITORING WELL
- DRILLED WELL #36516 — DRINKING WATER WELL
- SW-5 — SURFACE WATER SAMPLING LOCATION
- UD-1 — UNDERDRAIN SAMPLING LOCATION
- LEACHATE SAMPLING LOCATION
- 940 — EXISTING 10-FOOT CONTOUR
- 860 — EXISTING 10-FOOT LANDFILL BASE CONTOUR
- 840 — PROPOSED 10-FOOT LANDFILL BASE CONTOUR
- 840 — PROPOSED FINAL GRADE 10-FOOT CONTOUR
- EXISTING LIMIT OF WASTE CONTAINMENT
- APPROXIMATE EXTENTS OF EXISTING UNLINED LANDFILL AREAS A & B
- PROPOSED PHASE VI LIMIT OF WASTE CONTAINMENT
- PROPOSED PHASE VI CELL LIMIT OF WASTE CONTAINMENT
- PROPOSED ACCESS ROAD
- EXISTING/PROPOSED STORMWATER DETENTION POND
- EXISTING WETLAND LIMIT (TYP.)
- NEWSVT PROPERTY BOUNDARY
- VERMONT ANR ATLAS STREAM LOCATION
- 880 — VCGI 20-FOOT CONTOUR
- EXISTING DISCHARGE PIPE
- PROPOSED DISCHARGE PIPE

LEGEND:
Elevations of Groundwater, Underdrains, Surface Water; ft.

775.7	Groundwater, Surficial
820	Underdrain
700	Surface Water

Estimated Surficial Groundwater Flow Direction, MAY 2021

SANBORN ||| HEAD

GRAPHICAL SCALE
350' 175' 0 350' 700'

NO.	DATE	DESCRIPTION	BY

WHEM: U/Projects/NEWSVT/SemiAnnual WQ Reports/Semi 3-2021/Maps.

BASE MAP:

DRAWN BY:	L. TRACY
DESIGNED BY:	J. GRACE
REVIEWED BY:	B. BEAUDOIN
PROJECT MGR:	T. PETIT
PIC:	B. BEAUDOIN
DATE:	JUNE 2020

NEW ENGLAND WASTE SERVICES OF VERMONT, INC.

COVENTRY, VERMONT

SURFICIAL GROUNDWATER ELEVATIONS and FLOW DIRECTIONS: MAY 2021

WHEM. Last Revised: 8/10/2021.

PROJECT NUMBER: 1166.20

FIGURE NUMBER: 1

NEWSVT LANDFILLS
Coventry, Vermont
RECENT GROUNDWATER QUALITY TRENDS
MAY 2021

Location	Trend Compared to Previous Sampling Round [1]				Trend on 5-Year Graph [2]		
	Metals & Inorganics	Indicators	Volatile Organics	PFAS [3]	Metals & Inorganics	Volatile Organics	PFAS
Upgradient or Cross-Gradient of lined and unlined landfills (17 wells)							
409	D	M	ND	NA			
705	D	U	ND	NA	Mn: Generally D		
706	D	M	ND	NA	Mn: D		
BRW-3S	U	U	ND	stable/ND			
BRW-3D	D	M	ND	stable/ND	As: Stable		
BRW-4S	D	D	ND	stable/ND			
BRW-5S	M	M	ND	stable/ND	Mn: D, then Up		
E-3	U	M	ND	NA	Mn: M		
G-7D	D	D	ND	NA			
G-9D	D	D	ND	NA	As: M		
G-10DR	D	M	ND	NA			
G-11D	U	D	ND	NA			
G-26BR	D	M	ND	NA			
G-26D	D	D	ND	NA			
DW-21 Office	D	M	ND	NA			
DW-36516 St. Onge House & Barn (2005	U	M	ND	NA			
DW-30616 Maintenance	D	U	ND	NA			
Between lined and unlined landfills (1 well)							
F1	M	U	D	NA	As: U	Benzene: D	
					Mn: D, U, recently Stable		
Downgradient of unlined areas A & B (9 wells)							
412-R (possibly)	U	M	ND	NA	As: D		
					Mn: Stable		
A1	U	U	U	NA	As: D	Benzene: D	
					Mn: U, then Stable	Vinyl Chloride: D	
B1	U	D	ND	NA	As: Stable		
BRW-1	U	U	ND	stable/ND	Mn: D then U		
BRW-2R	U	D	ND	stable/ND			
D1R	U	M	ND	NA	As: D, then U		
D2	M	U	D	NA	As: U, then Stable	Acetone: Stable	
					Mn: D	Benzene: D, U, then D	
					Ni: D, recently U	2-Butanone: Stable	
P2R-R	D	M	D	U	As: D, then M	Benzene: D	D,
					Mn: D		then Stable
P8 (possibly)	D	U	ND	NA	As: D, then U		
					Mn: D		
Downgradient of lined landfills, and not impacted by unlined areas A & B (10 wells)							
103	D	M	D	NA			
703	D	U	ND	NA	Mn: generally D		
805M	D	M	ND	NA	As: U		
E1	M	M	ND	U			
E2	D	M	ND	stable/ND	Mn: D		
G-12BR	D	D	ND	NA			
G-12S	D	D	ND	stable/ND			
G-27D	D	M	ND	NA			
G-27S	D	M	ND	NA	Mn: M		
P6 (possibly)	U	M	ND	stable/ND	Mn: Stable, then U		

[1], [2]: Recent Trends are visually estimated, either in comparison to previous sampling event, or on 5-Year Graph.
[3]: Sum of Five Vermont-regulated PFAS (PFOA, PFOS, PFHxS, PFHpA and PFNA).
First = First sampling event, so no trend yet.
U = Concentrations generally up.
D = Concentrations generally down.
M = Mixed trend or no trend.
ND = No chemicals detected.
NA = Not Analyzed.

Last revised: 7/19/21;
Page 1 of 1;
U:\PROJECTS - WHEM\NEWSVT\SemiAnnual WQ Reports\Semi 5-2021\T5 5.2021.xlsx.
Tab = MW.

Jon Swan
January 1 ·

Exhibit R to Aff. of Swan

Leachate Truck Accident

To the Editor:

On the morning of December 27th, 2019, we learned that a fully-loaded 8000 gallon MBI leachate truck leaving the Casella Waste Systems landfill in Coventry, VT, before 3am in icy conditions, was involved in an accident with another garbage tractor trailer near the Black River, surely outside of the permitted hours of operation for the landfill. This terrible environmental accident is YET ANOTHER example of Casella Waste system's poor management of YET ANOTHER of their landfills in recent months. We just learned of violations earlier this year at the Bethlehem landfill for inadequate ground cover (DES site visit 8/15/19), as reported by the Caledonian. Do we want MORE of this for the North Country?

Are we to take Casella Waste Systems at their word that their proposed, "state-of-the-art" landfill at Forest Lake would be highly engineered and highly regulated, and would not contaminate the lake, as Casella Waste Systems maintained in their "Dalton Facts" literature sent to Dalton voters this past summer? (see their literature on the front page of the SFL website for yourself). This is just one more reason why we feel a landfill at Forest Lake is a terrible idea, from a terrible company with a terrible performance record, at a terrible location, and doing so puts not only the environment that we all love and enjoy at great risk, but the inhabitants of Whitefield and Dalton as well, since 90 garbage haulers and leachate trucks are estimated to travel to and from the proposed site at Chick's Sand and Gravel on Route 116 thru the town center of Whitefield. No thanks!

We simply cannot trust Casella Waste Systems and their corporate-speak as they call themselves "stewards of the environment" while their performance record speaks to the contrary. We do not want to be partners with a company that misleads people, as they tried to do to influence the zoning vote this summer in Dalton, or even their very sneaky, failed "lot-line adjustment" request to the Town of Dalton Planning Board on April 3, 2019. They even stated on WMUR that they would "improve the lake"! This company, as we've learned from their dealings in Bethlehem, simply cannot be taken at their word and should be judged more so on their performance. We do not want a landfill at Forest Lake and it's up to all of us to fight back, to speak up, and to protect our home in the North Country from this threat to our environment and our way of life.

Please talk to your friends, neighbors, and elected officials, let them know about the environmental accident involving a leachate truck from the Casella-

Save Forest Lake

@DumpCasella · Environmental Conservation Organization

Follow

Home Groups Reviews Videos More Like Message

Save Forest Lake
December 31, 2019 ·

Fully-loaded 8000 gallon MBI leachate truck leaving the Casella Waste Systems landfill in Coventry, VT before 3am in icy conditions, surely outside of the permitted hours of operation. This terrible environmental accident is yet another example of Casella Waste system's poor management of yet another of their landfills in recent months. We just learned of violations earlier this year at the Bethlehem landfill for inadequate ground cover (DES site visit 8/15/19, report on SFL file page).

Are we to take Casella Waste Systems at their word that their landfill at Forest Lake would be highly engineered and highly regulated, and would not contaminate the lake, as Casella Waste Systems maintained in their "Dalton Facts" mailer from July, 2019? (see front page on the SFL website for more). This is just one more reason why we feel a landfill at Forest Lake is a terrible idea, a terrible location, and doing so puts not only the environment that we all love and enjoy at great risk, but the inhabitants of Whitefield and Dalton as 90 garbage haulers and leachate trucks are estimated to travel to and from the proposed site at Chick's Sand and Gravel on Route 116 thru the town center of Whitefield. No thanks.

Please share with your friends. People need to know about the dangers this proposed landfill poses to all in the area. Thank you and Happy New Year! Jon

VTDIGGER.ORG

Coventry tanker crash causes landfill contaminant spill, injures 1

Department of Environmental Conservation officials said 8,000 gallons of leachate spilled as a ...

3 3 Comments 2 Shares

Like Comment Share

All Comments

Write a comment...

Author
Save Forest Lake
Thank goodness, talk about a close call and alot of nasty stuff! Now, let's see what kind of violations DEC comes up with. COVENTRY — An estimated 8,000 gallons of leachate from the landfill in Coventry spilled from a breached tanker truck early Friday morning in an accident that left one man seriously injured.

The leachate, liquid that is drained from within the liners of the landfill on Airport Road, contaminated soils around Route 5 where the accident occurred but did not reach the nearby Black River, said Shawn Donovan, spill manager for the Vermont Department of Environmental Conservation.

https://www.caledonianrecord.com/.../article_011cedaa...

CALEDONIANRECORD.COM
Leachate Spill Did Not Reach Black River, DEC Official Says

Like · Reply · 1y

Author
Save Forest Lake
Thought this last blurb from Casella-spokesman Fusco was pretty funny, and obviously quite telling about just how forthcoming this company is relative to the truth: "Fusco said that because the trucks weren't Casella's, he had little information about the spills." Yeah, right, Joe...it's your operation. If you don't have any information about the spills, from your own operation, then why on earth would we want you to operate a facility at Forest Lake when it's obvious you don't have full control over your own in Coventry?

Like · Reply · 1y

Author
Save Forest Lake
http://vtstatepolice.blogspot.com/.../us-rt-5-and-rt-14...

VTSTATEPOLICE.BLOGSPOT.COM
US Rt. 5 and Rt 14 Crash Press Release

Like · Reply · 1y

Write a comment...

Save Forest Lake
April 24, 2019 ·

Exhibit S to Aff. of Swan

"Subject: Ethics Complaint/Save Forest Lake

Good Morning Mr. Danles and Ms. Horne:

I am writing to file an ethics complaint against Mr. Eric Pospesil and his engineering/surveying company, Horizons Engineering located in Franconia, NH. At the April 3rd, 2019 Town of Dalton Planning Board meeting, Mr. Pospesil and his company, representing Casella Waste Systems, knowingly attempted to deceive the Planning Board, abutters, and the public regarding an attempt by Casella Waste Systems of Rutland, VT to adjust property lines for 300+ acres of land, intended to become a garbage landfill, in such a way as to avoid having to notify abutting landowners, including the NH Dept of Parks as the land in question borders Forest Lake State Park. An attempt was made to create a 50 foot border of land encompassing the proposed landfill site, which said border would remain in the name of the seller, Douglas Ingerson, Jr., thus allowing Casella Waste Systems to proceed with plans for the development of the garbage landfill without notification of said abutters. This would also represent an attempt to circumvent DRI statute, particularly RSA 36:54 thru 58, regarding the notification of affected municipalities concerning proposed developments which would have an impact beyond the boundaries of a single municipality, of which a garbage landfill adjacent to Forest Lake, Burns Pond, the Ammonoosuc River, etc., would surely constitute.

I feel this blatantly deceptive presentation of a "lot line adjustment, which was appropriately rejected by the Town of Dalton Planning Board, to negate the required notification of said abutters, constitutes professional malfeasance and possibly criminal conduct. Mr Pospesil knowingly attempting to mislead the town planning board with his "lot line adjustment" in order to fast- track a garbage landfill for his client, Casella Waste Systems, adjacent to a large body of water, Forest Lake. This sort of unprofessional behavior simply cannot be allowed to occur without some form of redress. Using the engineering company's professional position to mask the property owner and proposed purchaser's intent to instill sell a large, 300 acre + sized piece of land carved out of a larger parcel, for a garbage landfill in a town with no zoning ordinances and skirting the abutting landowner notification process, which would include the NH Div. of Parks, is fraudulent and despite the failure of the attempt, should be addressed accordingly by those responsible for licensing and permitting.

The citizens of the north country of New Hampshire are adamantly opposed to the instillation and operation of a garbage landfill adjacent to Forest Lake

State Park. We feel this will surely lead to the subsequent contamination and destruction of wetlands and will constitute an environmental catastrophe which would forever alter the ecosystem over a wide area of the north country, create economic hardship for an area which relies heavily on eco-tourism dollars from out of area vacationers, negatively impact the quality of life, health, and property values for so many area residents. This proposed garbage landfill surely cannot be allowed to progress, which is likely the reason for the attempted deception and subterfuge.

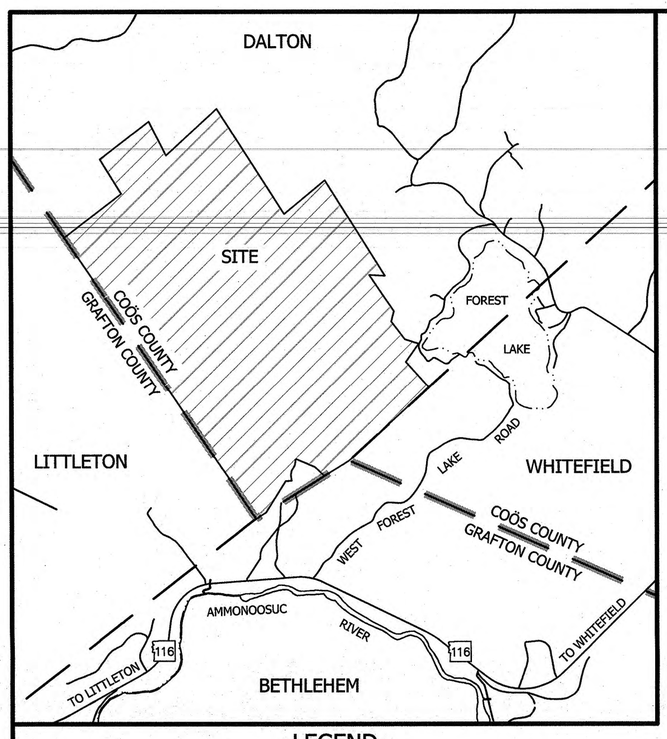
Thank You,

Jon Swan
Save Forest Lake"

8 3 Shares

Like Comment Share

Write a comment...



LEGEND

SCALE: 1" = 3000'

GENERAL NOTES

1. OWNER OF RECORD: J.W. CHIPPING INC, 104 DOUGLAS DR DALTON, NH 03574. GCRD B 2683 P 512, GCRD B 2683 P 514 AND CCRD B 999 P 313.
2. THE BASIS OF BEARING IS GRID. THE HORIZONTAL DATUM IS ON THE NEW HAMPSHIRE STATE PLANE COORDINATE SYSTEM NAD83 (2011). THE DATUM WAS DERIVED FROM STATIC GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY AND PROCESSED USING THE ONLINE POSITIONING USER SYSTEM (OPUS).
3. THIS PLAN IS BASED ON A FIELD SURVEY COMPLETED IN FEBRUARY OF 2019 WITH CARLSON BRX6 DUAL FREQUENCY SURVEY GRADE GNSS RECEIVERS AND TOPCON HIPER V DUAL FREQUENCY SURVEY GRADE GNSS RECEIVERS.
4. THE SURVEY IS CLASSIFIED AS RURAL (R) AND HAS AN ERROR OF CLOSURE GREATER THAN 1 PART IN 5,000.
5. THE PROPERTY BOUNDARY WAS COMPILED FROM THE DEEDS OF RECORD, REFERENCE PLANS AND EVIDENCE FOUND IN THE FIELD. ABUTTING PROPERTY LINES ARE APPROXIMATE PER THE TOWNS OF LITTLETON, DALTON, WHITEFIELD, AND BETHLEHEM TAX MAPS.
6. DOUGLAS DRIVE IS A FIFTY FOOT WIDE PRIVATE ROAD RIGHT OF WAY CENTERED ON THE ROAD AS NOW CONSTRUCTED. IT SERVES AS ACESS TO ALL OF THE PARCELS THAT ABUT IT AS SHOWN.

PLAN REFERENCES

(A) "SUBDIVISION PLAN LAND OF J.W. CHIPPING CORP. DALTON, NEW HAMPSHIRE." DATED AUGUST 2000. SURVEYED BY HARRY J. BURGESS AND RECORDED AT THE COOS COUNTY REGISTRY OF DEEDS AS PLAN# 1596.

(B) "MINOR SUBDIVISION LAND OF J.W. CHIPPING INC. VOL. 787 PAGE 584, DALTON, NEW HAMPSHIRE." DATED JANUARY 2014. SURVEYED BY HARRY J. BURGESS AND RECORDED AT THE COOS COUNTY REGISTRY OF DEEDS AS PLAN# 3969.

(C) "LOT LINE ADJUSTMENT LANDS OF J.W. CHIPPING CORP. VOL. 787 PAGE 584 DALTON, NEW HAMPSHIRE." DATED MAY 2014. SURVEYED BY HARRY J. BURGESS AND RECORDED AT THE COOS COUNTY REGISTRY OF DEEDS AS PLAN#s 3970 AND 3971.

(D) "SUBDIVISION OF LAND FOR J.W. CHIPPING CORP. DALTON, NEW HAMSHIRE." DATED JUNE 1988. SURVEYED BY KELLOGG SURVEYING & MAPPING, INC. AND RECORDED AT THE COOS COUNTY REGISTRY OF DEEDS AS PLAN# 1236.

(E) "SUBDIVISION PLAN LAND OF DOUGLAS G. INGERSON JR. DALTON, NEW HAMPSHIRE." DATED FEBRUARY 1996. SURVEYED BY HARRY J. BURGESS AND RECORDED AT THE COOS COUNTY REGISTRY OF DEEDS AS PLAN# 895.

FOR REGISTRY USE ONLY

CURVE TABLE			
CURVE #	RADIUS	DELTA	ARC LENGTH
C1	405.000	5.8060	41.04'
C2	860.000	20.8299	312.65'
C3	465.000	30.4488	247.12'
C4	825.000	4.4802	64.51'
C5	475.000	60.4747	501.35'
C6	200.000	50.7710	177.22'
C7	475.000	22.5240	186.73'

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	S14°16'51"E	60.23'
L2	S35°06'39"E	205.41'
L3	S04°39'44"E	315.15'
L4	S00°10'55"E	208.65'
L5	S68°42'04"E	129.96'
L6	S68°42'04"E	241.59'
L7	N00°10'55"W	119.25'
L8	N60°17'34"E	99.31'
L9	N09°31'18"E	158.04'
L10	N32°02'45"E	16.56'
L11	N32°32'48"W	50.97'
L12	S50°29'41"W	50.37'

n/f
TEAM O'NEIL REALTY TRUST
TIMOTHY O'NEIL TRUSTEE
DALTON TM 405-LOT 22

n/f
GORDON & JANICE LEBLANC
DALTON TM 405-LOT 32

n/f
J.W. CHIPPING
LITTLETON TM 25-LOT 15

n/f
J.W. CHIPPING
DALTON TM 405-LOT 33

BEFORE ADJUSTMENT 322.71 AC
+129.97 AC FROM TM 406-LOT 2.1
- 49.93 AC TO TM 406-LOT 2.1
TO BECOME 402.75 AC

n/f
STATE OF NEW HAMPSHIRE
DALTON TM 408-LOT 6

n/f
J.W. CHIPPING
DALTON TM 406-LOT 1

n/f
J.W. CHIPPING
DALTON TM 406-LOT 2.1

BEFORE ADJUSTMENT 415.21 AC
-122.40 AC TO TM 406-LOT 3
+87.22 AC FROM 406-LOT3
-129.97 AC TO TM 405-LOT 33
+ 49.93 AC FROM TM 405-LOT 33
TO BECOME 300.00 AC

n/f
J.W. CHIPPING
DALTON TM 406-LOT 3

BEFORE ADJUSTMENT 297.36 AC
-87.22 AC TO TM 406-LOT 2.1
+ 122.40 AC FROM TM 406-LOT 2.1
TO BECOME 332.54 AC

n/f
CARL & DEBORAH HOWES
DALTON TM 407-LOT 1

n/f
ANTONIO T. ROSA JR. &
CINDY L. ROSA
DALTON TM 407-LOT 001.2

n/f
CROWE FAMILY INVESTMENTS, LLC.
LITTLETON TM 36-LOT 17

n/f
J.W.CHIPPING
DALTON TM 406-LOT 2.3

n/f
DEBRA L. KELLEHER
LITTLETON TM 49-LOT 1

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 2.4

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 2.5

n/f
J.W. CHIPPING
DALTON
TM 406-LOT 3A

DALTON
TM 407
LOT 001.3

n/f
JEFFREY & JACQUELINE
COSTURA
DALTON TM 201-LOT 26

n/f
J.W. CHIPPING
BETHLEHEM
TM 406-LOT 1

n/f
WHIPOORWILL GLEN
c/o ANNABELL C. BARTOSE
BETHLEHEM
TM 406-LOT 5

M406 L8.1
M406 L8.2

1" IPF UP 4.6'
1" IPF UP 2.2'
1" IRON ROD FOUND UP 2'
5/8" REBAR FOUND UP 18"
2" IPF IN BOULDER
1/2" REBAR UP 1'
1/2" REBAR UP 1'
WOOD POST IN STONES
STONE PILE PAINTED BLUE
STONE PILE PAINTED BLUE
5/8" REBAR UP 16"

1834.46' S 52°03'06" W
1197.02' S 31°34'32" E
1064.52' N 26°45'04" W
1902.16' S 48°09'01" W
3475.49' N 32°32'48" W
5925.44' S 34°46'50" E
832.82' S 26°58'27" W
1516.76' S 85°22'25" W
1308.15' S 16°15'27" E
453.55' N 32°32'48" W
1493.13' S 49°53'56" W
1075.87' S 49°53'56" W
1379.51' S 85°38'48" E
904.13' S 12°34'01" E
505.93' S 78°06'12" W
2613.87' S 11°30'56" E
3469.01' S 29°19'23" E
3158.77' S 32°29'54" E
534.16' S 34°48'26" E
1822.07' S 55°20'14" W
656.96' S 34°48'26" E
1800.72' N 49°05'23" E
723.36' S 45°32'23" E
1722.93' N 59°04'37" E
1073.11' N 49°16'05" E
465.95' N 28°02'08" W
1224.70' N 33°22'11" W
300.27' N 15°02'48" E
623.45' N 36°25'49" W
406.80' N 71°22'03" W
625.10' N 34°24'17" E
1183.23' N 41°52'08" W
1298.54' S 34°48'26" E
601.51' S 67°14'22" E
518.30' S 46°34'37" E
791.79' N 60°38'13" E
3051.59' N 48°21'09" E
M252 L1
M252 L2
M252 L3
M252 L4
M243 L1
M243 L2
M243 L3
M243 L4
L5
L6
L7
L8
L9
L10
L11
L12
C1
C2
C3
C4
C5
C6
C7

LINE TO BE ABANDONED
LINE TO BE ABANDONED
LINE TO BE ABANDONED

FOREST LAKE RD
FOREST LAKE

LITTLETON
DALTON
LITTLETON
BETHLEHEM
DALTON
WHITEFIELD
WHITEFIELD
BETHLEHEM
DOUGLAS DRIVE
NH ROUTE 116

0 250 500 1000 2000

SCALE IN FEET

LOT LINE ADJUSTMENT PLAT
APPROVED
PLANNING BOARD
Dalton, New Hampshire

DATE _____ CHAIRMAN _____

SECRETARY _____

THE SUBDIVISION REGULATIONS OF THE TOWN OF DALTON, NEW HAMPSHIRE ARE A PART OF THIS PLAT, AND APPROVAL OF THIS PLAT IS CONTINGENT UPON COMPLETION OF ALL REQUIREMENTS OF SAID SUBDIVISION REGULATIONS, EXCEPTING ONLY ANY VARIANCES OR MODIFICATIONS MADE IN WRITING BY THE BOARD AND ATTACHED HERETO.

LEGEND

- REBAR TO BE SET
- PROPERTY LINE
- NEW LOT LINE
- ABUTTER LINE
- PROPERTY LINE TO BE ABANDONED
- EDGE OF LAKE
- RIGHT OF WAY

CERTIFICATION

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO RSA TITLE LXIV AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

ERIC S. POSPESIL, LS 967

DATE 3/13/2019

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR NO. 967 ERIC S. POSPESIL SIGNATURE

horizons Engineering
Littleton NH • New London NH • Newport VT • Pomfret VT
603-444-4111 603-877-0116 802-334-6434 802-457-3151

A MINOR LOT LINE ADJUSTMENT PLAN FOR LANDS OF
J.W. CHIPPING INC.
TM 405 LOT 33, TM 406 LOT 3 & TM 406 LOT 2.1
DOUGLAS DRIVE
COOS COUNTY
DALTON, NEW HAMPSHIRE

DATE:	PROJECT #:
MAR. 2019	19045
SURV'D BY: ESP/BDD	DRAWN BY: ESP/NWS
CHECK'D BY: ESP	ARCHIVE #: H-5513

SHEET 1 OF 1

W:\19045 NCES - Dalton\DWGS\Base\19045_Base.dwg, 3/13/2019 1:16:58 PM, epospesil

Save Forest Lake
May 28, 2019 ·

Exhibit U to Aff. of Swan

To Caledonian Record:

"Dear Editor:

This letter goes out to all of our North Country neighbors. The residents of Dalton have submitted a petition calling for a vote to empower the Town of Dalton with emergency temporary zoning, in hopes to thwart an attempt by Casella Waste Systems to create their 2nd garbage landfill in the North Country. This not-yet proposed landfill would be only 7 miles away from Casella's current one in Bethlehem and it abutts Forest Lake and the State Park off of Route 116. The location is the worst imaginable, with high ground that drains into both Forest Lake and Alderbrook, both of which eventually drain into the Connecticut and Ammonoosuc Rivers. With options to purchase nearly 1900 acres over a 25 year period, that's a lot of future expansions by Casella Waste Systems! What could possibly go wrong with that scenario? The regional impact on the North Country will be devastating, with increased traffic congestion, risks to pedestrian safety, and air and noise pollution as garbage haulers roar thru the Towns of Carroll, Whitefield, Littleton, Franconia, Sugar Hill, and Bethlehem en route to Douglas Drive on Route 116. We ask that you lend your voice to ours and join us in opposition to this terrible idea.

However, we must also stand united with our neighbors in Bethlehem who voted against any further expansion of the Casella-run landfill in their town. The residents of that town do not want Casella as a neighbor anymore. Why is that? How much has been spent battling them in court? We know Bethlehem has some of the highest property taxes in the North Country as a result of their relationship with Casella. So much for the tax benefit of having Casella as a neighbor, as some pro-Casella sorts like to tout. Do we want that? No! Dalton doesn't need a bully as a business partner, who will sue the town every time we try to exert our influence in a way they disagree with. We also know Casella is trying to pack the Town of Bethlehem Planning Board in an attempt to try, yet again, and against the will of the voters, to seek further expansion in that town. They have proven to be a bad business partner, a bad neighbor, and a bully with deep pockets. It's time to "Dump Casella" in the North Country, period.

We must defend the natural resources and beauty of the North Country for the generations to come. This is what makes our mountains, woods, lakes, and rivers a vacation destination for so many. Do we want to see all of that compromised and polluted? Our fresh air gone? The residents of Bethlehem have voted, and soon the voters of Dalton will have the same opportunity, to tell Casella "No More!". Look elsewhere for your future dumping grounds! It is imperative and our duty to protect the North Country for the generations that will follow. Please, contact YOUR local, state, and federal representatives and tell them you oppose a 2nd Casella-run garbage landfill next to Forest Lake. We stand with the citizens of Bethlehem and THEIR decision to close their landfill. We are ALL in this together. We defeated the Northern Pass together, we can defeat Casella together. It's time for the North Country to Dump Casella!

Jon Swan
(603) 991-2078
Organizer, Save Forest Lake
Please Help Us To Save Forest Lake!
http://www.SaveForestLake.com
Dump Casella!
Do not allow this proposed development to scar the beautiful landscape of the North Country for generations to come"

https://www.caledonianrecord.com/orleans_county_record/news/bethlehem-landfill-manager-appointed-as-planning-board-alternate/article_7634d54e-fe0e-586a-bfad-b46b1f1e17e8.html

Bethlehem:Landfill Manager Appointed As Planning Board Alternate

Robert Blechl
Jun 18, 2013

BETHLEHEM, N.H. -- The appointment of Casella landfill manager Kevin Roy as an alternate to the planning board last week caused some to voice concerns about a potential conflict of interest and access to sensitive documents.

Roy, one of four applicants for two alternate seats, was appointed Wednesday in a 4-2 board vote.

Some board members suggested the vote be tabled until the town receives legal advice, but others said Roy submitted his name first before the other three applicants and the only requirement in the past has been that full-time board members or alternates be residents of Bethlehem.

On Thursday, Roy, who manages the landfill on Trudeau Road, said he previously thought about serving on the planning board, but the town's settlement agreement with Casella Waste Systems had not been finalized, the lawsuits between the two entities were still continuing and he didn't think it was a good time.

"Now that I'm back in Bethlehem full-time, I thought a good way to get started was as an alternate, to participate and get some experience," he said. "A couple of people on the board said there was an opportunity for an alternate and there was no one else applying so I applied."

After Roy submitted his application May 23, three other applicants filed, with one on Monday, the other on Tuesday and the third on Wednesday, said town planning and zoning clerk Dawn Ferringo.

Once Roy applied, the town received calls from residents interested in who was applying, she said.

Roy's appointment sparked about an hour of debate, sometimes heated, before the deciding vote.

Resident Julian Czarny said he's concerned about non-public documents Roy could have access to and said while the January 2012 settlement agreement is in effect today it might not be tomorrow.

Being a paid employee of North Country Environmental Services Inc., the Bethlehem subsidiary of Casella, would possibly be a cause for conflict, said planning board member Harold Friedman, who asked the board to table the vote.

"He can recuse himself so that point is moot," said planning board member Peter Roy, no relation to Kevin Roy.

Board member Sandy Laleme said to not allow someone to serve on the board based on their employment is discriminatory.

Board alternate member Jeanne Robillard, who did not favor Kevin Roy's appointment, said, "My concern would not be that Mr. Roy is an employee but a principal in the settlement. It would create a legal conundrum for the board to appoint someone with the agreement the board might have to enforce."

Robillard, Friedman and board chair Andrea Bryant said since there is no time limit on appointments the board should first investigate the possible implications of appointing Roy.

"The board has no history of qualifying candidates," said former planning board chairman and current alternate member Don Lavoie. "If you are eligible to be elected, you are eligible to be an alternate."

If there are not enough full-time planning board members for a quorum, the chairman of the board can appoint an alternate as a full-time member to sit in on a discussion or participate in a vote.

Bryant said if a vote has anything to do with the landfill it is obvious Roy would not be part of it.

"I wonder about access to attorney-client documents in the town hall," she said. "If we can get attorney advice we know we are doing the right thing."

Kevin Roy said if he were elected as a full-time board member he would recuse himself from any vote related to Casella or the landfill.

He also said all legal documents should be locked up and he has no interest to look in files.

"There's no reason for it," he said. "I have no interest in looking back."

Laleme said the only reason the board is having the discussion is because one of the applicants is Kevin Roy who works for Casella.

"Attorney-client documents are in locked files," said Laleme. "If someone is recused from a situation they won't have access."

Regarding access to privileged files, Lavoie said former planning board chairman Mike Ritter showed extreme caution in ensuring alternates were not privy to such files.

"If anyone tried to access them they would be subject to court action," he said.

Board member Pat Doughty made the motion to appoint two of the four members in the order their applications arrived at the town office.

"In the past, we've done it in order," he said.

"In the past, we never had to turn anyone away," said Bryant. "We have four applicants. We should do due diligence."

In her experience, Bryant said the board never had more applicants than openings.

Lavoie said the board is exceeding its authority by considering any qualification beyond the applicant being a resident.

Voting in favor of appointing the applicants based on order of application, with Kevin Roy first in line, were board members Peter Roy, Laleme, Mike Bruno, and Doughty. Opposed were Friedman and Alecia Loveless. Bryant abstained.

Applicant Neil Brody, the second in line, was also appointed as an alternate, giving the board a total of five alternate members.

In the past, Lavoie said it was sometimes difficult getting a quorum of full-time board members for a vote and alternates were sometimes needed.

New Hampshire does have a statute regarding the disqualification of board members in votes and that statute encompasses members of a planning or zoning board, building code of board appeals, or a heritage, agricultural, housing or historic district commission.

RSA 673:14 states no member "shall participate in deciding or shall sit upon the hearing of any question which the board is to decide in a judicial capacity if that member has a direct personal or pecuniary interest in the outcome which differs from the interest of other citizens ..."

Kevin Roy said he did not tell Casella he was applying for the alternate seat and did not seek the company's permission.

Roy said he's served on boards and committees in other communities, wants to serve Bethlehem and can bring to the planning board the perspective of someone who manages a business and is familiar with regulations.

On Friday, Casella spokesman Joe Fusco said the company did not know Roy was applying to be an alternate and it wasn't necessary for the company to know.

"We want our managers to be involved in the community where they work," said Fusco. "Kevin is obviously a resident of the community and wants to get involved. Our managers all over New England are involved at the local level. Kevin Roy is no different from any other businessman in town."

Fusco said he sees no conflict of interest.

"I think his presence is not a legitimate cause for concern," he said. "He's not going to sit on any landfill issue because he's going to recuse himself. They have other alternates to choose from."

Like Follow Share ...

Write a comment...

Believe in Bethlehem

@believeinbethlehem

Home

Email Signup

Events

About

Photos

Posts

Community

Notes

Create a Page

Believe in Bethlehem
March 10, 2018 ·

Jim Martin, a candidate for the Planning Board, says, "I am asking for your vote on Tuesday, March 13th to earn my spot on the Planning Board. I have lived in Bethlehem for the past 5 years when I purchased my home on River Rd. My time spent serving my country as well as my time as a previous owner of a construction business give me the well-rounded experience I feel would benefit the Planning Board greatly. I value my dedication to this community, my job, my family and my country. I fully believe that each and every candidate has something unique to bring to the table, as do I. Together we can work together to help our beloved town of Bethlehem to not only survive but thrive too! I hope you will join me on Tuesday, March 13th, to cast your vote for me to earn my spot on the Planning Board!"

Jim Martin and 15 others 3 Comments 4 Shares

Like Comment Share

Most Relevant

Write a comment...

Dan Bois No words from anyone?

Like · Reply · 2y

Kathy Dowd Because he is nothing but a drunk

Like · Reply · 1y

Write a reply...

Dan Bois Is this really all the big tadoo

https://www.caledonianrecord.com/news/local/bethlehem-casella-funded-group-proposes-landfill-expansion/article_1f363136-dcb9-501b-85fe-8bb8e9e127e2.html

FEATURED

Bethlehem: Casella-Funded Group Proposes Landfill Expansion

Signatures Collected For Petition Warrant Article Seeking Same 100-Acre Expansion Proposed In March

Robert Blechl
Nov 14, 2017

Brothers Tony Roy, left, and Peter Roy prepare to drum up voter support for a renewed proposal to expand the Casella la They were among two dozen residents belonging to a group called Believe in Bethlehem who gathered at the library Sat morning to go door to door with petitioned warrant articles. (Photo by Robert Blechl)

BETHLEHEM — Eight months after voters rejected a push by Casella Waste Systems to expand its landfill by 100 acres, the proposal is back, this time through a Casella-funded citizens group that seeks to put two petitioned articles on the March 2018 town meeting warrant.

The petition drive follows a recent town-wide mailer survey sent to residents by a group called Believe in Bethlehem, asking questions that include if they are happy with the direction in Bethlehem, if they believe the town has a revenue problem, and if they voted against landfill expansion in March and why.

The mailer does not give details about the group, but a physical address that shows up when residents join the email list associated with Believe in Bethlehem's MailChimp account is the same address as Casella's Northeastern regional office in Saco-Biddeford, Maine.

On Monday, Casella spokesman Joe Fusco said Casella will provide support, financial and otherwise, to the group and said he understands others have made financial contributions as well.

"We are delighted by the existence of this group, and by the time and effort these citizens are giving to this effort," he said.

Concerns have been voiced, however, about transparency.

Nowhere was it disclosed that each voter had been assigned a unique code number, one small and printed upside down in the corner of the outer and return envelopes that matches completed surveys to a master list of voter names, said resident Julie Seely.

“I’m horrified at the invasion of privacy involved in the survey and in what in Bethlehem are very personal questions,” said Seely, opposed to landfill expansion because of environmental and other concerns. “I’m also dismayed at the number of current and past town elected officials who are involved in the group and had no issue with the early dishonesty.”

On Saturday at the town library, NCES employee Annette Marquis helped organize about two dozen Believe in Bethlehem members to go door to door to drum up support for the warrant articles.

The first petitioned article asks to see if the town will authorize and direct selectmen to negotiate with Casella for a new host community agreement (HCA) providing for a 100-acre expansion of the town’s landfill district during a 20-year period.

Casella is estimating a $53.7 million benefit package to the town during the 20 years, to include property tax revenue, free curbside trash and recycling pickup, free transfer station access for residents disposing of solid waste, and host community fees payable for each ton of waste accepted at the landfill.

It is the same package voters rejected in March.

Since then, Casella has disputed its property tax payments to the town.

In October, company representatives went before selectmen to say Casella has been paying too much property tax to the town and the amount should be reduced and based on actual tipping fees (a disposal fee per ton) and actual market value of the property and not on projections.

Casella argues the actual tipping fee is about $46. Some residents and selectmen in Bethlehem are skeptical, however, and say the tipping fee is higher.

The property tax estimates in the $53.7 million proposal are based on the estimate in the HCA that the town voted on in March, said Fusco.

He did not say if Casella will still pursue the reduction in taxes it suggested last month.

“Property taxes are determined using a statutory procedure,” said Fusco. “NCES/Casella can’t just reduce its property taxes. If our property taxes are calculated as the law and our agreement with the town requires, we pay them. If they are not, we ask for an adjustment – as would any other taxpayer.”

The second petitioned article seeks an amendment to the town zoning ordinance to replace the boundaries description of District V, the town’s landfill district.

In March, Bethlehem residents voted 407-526 against expanding the landfill district by 100 acres.

If voters reject another expansion, the landfill is expected to reach capacity by about 2021 or 2022 and close.

Believe in Bethlehem’s motto is “to preserve, promote and plan Bethlehem’s financial resources into the future.”

On Saturday morning, as the Believe in Bethlehem group that includes selectmen Martin Glavac and Richard Ubaldo and some planning board members, were organizing, Marquis said she believes in the effort to build up the community with new businesses so the town’s younger generation can remain in Bethlehem and find work.

The wording in the survey was developed by the group and Casella, with the group having the final say, and the wording in the warrant articles was based on the articles voted on in March, said Fusco.

“The group did not have a lawyer, so NCES/Casella asked its lawyer to provide the articles Believe in Bethlehem wanted in a way that would meet the requirements of the law,” he said.

Save Forest Lake
November 24, 2019 ·

Exhibit Y to Aff. of Swan

PA and landfill and WWTP runoff...May 2019.

How much longer will NH allow for Casella to ship its millions of gallons of leachate to the Concord and Franklin WWTPs despite their inability to treat it effectively before it is emptied into the Merrimack River?

POST-GAZETTE.COM

Pa. Attorney General to investigate landfill runoff problems in Westmoreland County

4

Like Comment Share

Write a comment...

Pa. Attorney General to investigate landfill runoff problems in Westmoreland County

DON HOPEY AND DAVID TEMPLETON
Pittsburgh Post-Gazette

MAY 23, 2019 | 9:14 PM

The Pennsylvania attorney general's Environmental Crimes Section will investigate how landfill runoff damaged the Belle Vernon sewage treatment plant, causing contaminated wastewater discharges into the Monongahela River.

Speaking at a news conference Thursday afternoon in Uniontown, Washington County District Attorney Eugene Vittone said he asked state Attorney General Josh Shapiro to take over the investigation in a letter he sent Tuesday. Fayette County District Attorney Richard Bower said he planned to send a similar letter within the next few days.

The two district attorneys moved quickly last week to get a temporary injunction prohibiting the Westmoreland Sanitary Landfill in Rostraver, which also goes by the name Tervita-Rostraver Township Sanitary Landfill,

from piping runoff contaminated by shale gas drilling and fracking waste chemicals to the sewage treatment plant. The plant is also prohibited from discharging any contaminated wastewater into the river.

“Public safety is the foremost objective of any district attorney in the state,” Mr. Vittone said. “”The potential threat to the river was stopped and will remain so. We did this because of the high volume of contaminated water flowing into the Belle Vernon sewage treatment plant and also because of questions about the chemical composition of the wastewater.”

The landfill turned off its pipeline to the plant on Saturday.

Mr. Vittone and Mr. Bower also announced Friday that the landfill owner and the Belle Vernon Municipal Authority, which operates the sewage treatment plant, had agreed to a consent order that will continue the terms of the injunction for 90 days while they seek to remedy the problem.

“The parties are enjoined from discharging any waste material into the Mon River, and signed the order which will give them an opportunity to work out the issue in ways that protect the river,” Mr. Bower said.

A hearing in Fayette County Common Pleas Court scheduled for Friday on a permanent injunction was postponed.

Mr. Vittone said last week’s decision to seek a temporary injunction was, “a successful and appropriate use of power vested in the district attorneys’ offices by the Pennsylvania Clean Streams Act.”

He said they acted to make sure the sewage plant discharges were not harming the river, which is the source of drinking water for several public water suppliers in the Mon Valley and Pittsburgh area communities.

Rebecca Franz, chief deputy attorney general, declined to say how her office would conduct the investigation or what its first steps would be, citing the “ongoing investigation” as the reason. She did say that the attorney general employs nine investigative agents, several with the ability to do field sampling.

“The district attorneys took great steps to remedy the discharges into the river last week,” Ms. Franz said. “Pennsylvanians have a constitutional right to clean air and clean water and we are committed to protecting those rights.”

She declined to comment about whether the investigation will include a look at a scheme proposed by a state Department of Environmental Protection official in a January email to the Belle Vernon Municipal Authority engineering firm that proposed continuing to allow illegal sewage plant discharges into the river and have the landfill pay any fines for violations.

The temporary injunction was imposed two days after the Belle Vernon Municipal Authority voted to terminate its contract with the landfill, owned by Uniontown-based Nobel Environmental Inc., to treat its runoff, also called "leachate." The leachate is piped about three miles to the treatment plant located along the Monongahela River.

According to Guy Kruppa, the sewage plant superintendent, the landfill was piping an average of 100,000 gallons of leachate a day to the sewage treatment plant, double the amount allowed in the contract. And chemical testing done by the authority found high levels of ammonia, total suspended solids, and a host of compounds associated with shale gas drilling and fracking, including volatile organic compounds, magnesium, barium, phenols and oil and grease.

Ro Rozier, a spokeswoman for the landfill owners, issued a statement saying the landfill has begun using alternative leachate disposal methods and would continue to "invest in onsite technology to improve leachate quality that will exceed government standards."

DEP records show the landfill began accepting drilling "cullings" — rock and soil from deep underground produced by the drilling process — in 2010, and in 2017 that amounted to 119,716 tons of debris or 40 percent of the landfill's total waste stream.

Don Hopey: dhopey@post-gazette.com or 412-263-1983. Twitter: @donhopey. David Templeton: dtempleton@post-gazette.com or 412-263-1578. Twitter: @templetoons.

First Published May 23, 2019, 9:14pm

ENVIRONMENTAL HEALTH PROGRAM SCIENCE

Landfill Leachate Released to Wastewater Treatment Plants and other Environmental Pathways Contains a Mixture of Contaminants including Pharmaceuticals

COMPLETED

By **Environmental Health Program**

November 13, 2015

Overview +

Science +

Publications +

SCIENCE

Science Explorer

Mission Areas

Programs

Unified Interior Regions

Science Centers

Observatories

Laboratories

Frequently Asked Questions

Educational Resources

PRODUCTS

Landfills are the final repository for a heterogeneous mixture of liquid and solid waste from residential, industrial, and commercial sources, and thus, have the potential to produce leachate—a liquid waste product that consists of a diverse mixture of chemicals as precipitation or applied water moves through the waste. Landfills are often not the final repository for leachate which can be discharged to surface waters following onsite or offsite wastewater treatment.

In this national-scale study, scientists provide an assessment of CECs in landfill leachate disposed offsite that has undergone treatment or storage processes (final leachate) at landfills across the United States to gain a greater understanding of this potential contaminant source to the environment. This study follows and advances previous USGS research of leachate prior to onsite treatment, storage processes, and offsite disposal (fresh leachate).

In this study, final leachate samples from 22 landfills were collected and analyzed for 190 CECs including pharmaceuticals, industrial chemicals, household chemicals, steroid hormones, and plant/animal sterols. The sampling network included municipal and private landfills with varying landfill waste compositions; geographic and climatic settings; ages of waste, waste loads, and leachate production; and leachate management strategies.

In some cases USGS scientists collected leachate samples from manhole access points like this one. Photo Credit: Dana W. Kolpin, USGS

Scientists determined that final leachate samples contained 101 of the 190 chemicals analyzed for the study, with chemicals present in every final leachate sample collected at levels ranging from as low as 2 nanograms per liter (ng/L) to as high as 17,200,000 ng/L. The most frequently detected CECs were lidocaine (local anesthetic, found in 91 percent of samples), cotinine (nicotine breakdown product, 86 percent), carisoprodol (muscle relaxant, 82 percent), bisphenol A (component for plastics and thermal paper, 77 percent), carbamazepine (anticonvulsant, 77 percent), and N,N-diethyltoluamide (DEET, insect repellent, 68 percent).

A detailed comparison of CEC concentrations between final leachate in landfills included in this study and the previous study of fresh leachate indicated that levels of CECs were significantly less in final leachate compared to those observed in fresh leachate samples. Nevertheless, final leachate still contained a complex mixture of CECs at concentrations that may be potential cause for concern if released to the environment.

This research is part of continuing USGS efforts to quantify the contribution of contaminants in leachate released from landfills to various pathways that ultimately lead to the environment. Use of landfills as a means of waste disposal will likely increase as the global population continues to increase. Despite advancements in recycling, source reduction, and composting, the amount of municipal solid waste discarded in U.S. landfills increased from 150 million tons in 1985 to 165 million tons in 2010. The study is intended to inform landfill managers, stakeholders, and regulators about chemicals present in landfill leachate disposed offsite to environmental pathways.

This research was funded by the USGS Ecosystems Mission Area’s Environmental Health Program (Contaminant Biology and Toxic Substances Hydrology).

Sources/Usage: Public Domain.
U.S. Geological Survey (USGS) scientists processing leachate samples collected for a national-scale study on the occurrence of contaminants of emerging concern (CECs) in landfill leachate disposed offsite. Photo Credit: Jason R. Masoner, USGS

Frequently Asked Questions

1. Why were landfills targeted for study?

Landfills are the final depository for much of the solid waste we generate. While it is known that such landfill waste can contain a wide variety of contaminants, little research to date has been conducted regarding contaminants of emerging concern (CECs) in final landfill leachate.

2. What is meant by "final" leachate?

Final leachate is leachate that is collected after all storage and treatment processes that are in place within a given landfill. This sample type is in contrast to the sampling of "fresh" leachate (i.e. before all storage and treatment processes with a given landfill).

3. Why were both public and private landfills used for this study?

This study was comprised of a mix of public (16) and private (6) landfills to properly capture the range operating conditions that exist for the landfills present within the United States.

4. How were the sites selected for this study?

The landfills were selected to provide a range of hydrogeologic setting, climate, size, and leachate treatment and disposal practices. Ultimately, however, we could only collect samples at landfills that were willing to participate in this research.

5. Who collected the leachate samples for this study?

Samples were collected via a combination of U.S. Geological Survey (USGS) scientists (when a sampled landfill was in close proximity to a USGS office) and personnel form State environmental agencies, County and municipal governments and environmental firms on contract by private solid waste companies. All sampling personnel followed stringent, predetermined protocols for collecting, processing, and shipping the leachate samples collected for this study.

6. Why was it decided to keep the landfills and their specific locations anonymous?

Our experience has shown that many landfill operators are reluctant to participate in this type of research if their specific name and locations are provided. As such locational information has no bearing on the interpretations of study results, we made the decision to keep all landfill locations anonymous for this study to maximize the sampling options during the site selection process.

7. Were there any safety concerns for the personnel collecting these leachate samples?

The safety of personnel collecting environmental samples is always paramount for the USGS. Thus, the field protocols were designed to minimize any personal exposure to the landfill leachate being collected while still collecting samples that are representative of the landfills in question.

8. How were the target contaminants selected for study?

The 190 CECs analyzed for this study were those available from existing analytical capabilities available within the USGS. These target CECs within these available methods were selected based on annual use, chemical/physical properties (e.g. mobility, persistence, etc.), and known or suspected environmental effects.

9. What were the major findings for this study?

At least one CEC was detected in every leachate sample collected (median = 22, max = 58). The most frequently detected CECswere lidocaine (91 percent, local anesthetic), cotinine (86 percent, nicotine degradate), carisoprodol (82 percent, muscle relaxant), bisphenol A (BPA, 77 percent, plastics and thermal paper), carbamazepine (77 percent, anticonvulsant), DEET (68 percent, insect repellent). Detected concentrations ranged from 2 ng/L (estrone) to 17,200,000 ng/L (BPA). CEC concentrations were greater in landfills that were still operating and actively accepting waster compared to closed, unlined landfills. CEC concentrations where significantly greater in fresh leachate (from our previously published landfill research) compared to the final leachate from this study.

10. Are there any human or environmental health issues regarding final leachate that the public should be concerned about?

The results of the present study provide useful precedents for future investigations of the fate, risk, and toxicity of CECs in landfill leachate as they directly or indirectly enter aquatic and terrestrial environments. Such research provides information that can be used to support decisions about the regulation of unwanted/unused pharmaceuticals and leachate treatment methods; better understanding of the fate of CECs in leachate in landfill systems; and better understanding of the ecological effects posed by disposal of leachate to potential environmental receptors.

11. How does this research inform current pharmaceutical disposal policies?

This study was designed only to assess the occurrence of targeted contaminants in leachate. For more information on disposal of unused medicines consult the U.S. Food and Drug Administration and the U.S. Environmental Protection Agency.

NEWS

Featured Stories

News Releases

Science Snippets

Technical Announcements

Employees in the News

Get Our News

Media Contacts

I'm a Reporter

CONNECT

Data

Maps

Publications

Multimedia Gallery

Web Tools

Software

U.S. Board on Geographic Names

The National Map

USGS Library

USGS Store

Park Passes

ABOUT

About Us

Survey Manual

Organization

Key Officials

Congressional

Budget

Careers and Employees

Doing Business

Emergency Management

LEGAL

Accessibility

FOIA

Legal

Privacy Policy

Site Map

DOI and USGS link policies apply

U.S. Department of the Interior

Contact USGS

1-888-ASK-USGS

answers.usgs.gov

new england
NEW ENGLAND WASTE SERVICES
A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

March 15, 2021

Ms. Kristin Noel
City of Concord WWTF
General Service Department
125 Hall Street
Concord, New Hampshire 03301-3228

RE: New England Waste Services, Inc.
North Country Environmental Services, Inc. Landfill Facility – Bethlehem, NH
& New England Waste Services of Vermont, Inc. Landfill Facility – Coventry, VT
Leachate Disposal Permits (#H34 & #H35) Respectively
Schedule A Reporting - Monthly – February 2021

Dear Ms. Noel:

New England Waste Services, Inc. writes to provide the Schedule A Monthly Reporting as required in the above referenced discharge permits.

Our records indicate that for the reporting period, leachate originating from the NCES (North Country Environmental Services, Inc) landfill facility was delivered to the Concord WWTF. No leachate from the New England Waste Services of Vermont, Inc. landfill facility was delivered to the Concord WWTF during this reporting period.

Should you have any questions, please do not hesitate to contact me at 802.585.0551 or at lindsey.menard@casella.com.

Sincerely,

NEW ENGLAND WASTE SERVICES OF VERMONT, INC.

Lindsey Menard
Permits, Compliance, and Engineering

Enclosures

c. John Gay, New England Waste Services, Inc. (via email)
Kevin Roy, New England Waste Services, Inc. (via email)
Jeremy Labbe, New England Waste Services, Inc. (via email)
Annette Marquis, New England Waste Services, Inc. (via email)

new england
NEW ENGLAND WASTE SERVICES
A Casella Company

1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

North Country Environmental Services, Inc.
581 Trudeau Rd., P.O. Box 9
Bethlehem, New Hampshire 03574

Certification Statement

Industrial Wastewater Permit Compliance Report

Date of Report: March 15, 2021

I certify that under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines or imprisonment for knowing violations.

Lindsey Menard
Permits, Compliance, and Engineering

CONCORD WASTE WATER TREATMENT FACILITY						
NORTH COUNTRY ENVIRONMENTAL SERVICES LANDFILL - February 2021 Report						
Date of Disposal	Volume (Gallons)	BOD 5 (lbs)	BOD (mg/L)	COD (mg/L)	pH	Laboratory Report Date
NCES/LEACHATE						
2/1/2021	7,225	16	270	2100	7.98	01/26/21
2/1/2021	8,460	19	270	2100	7.98	01/26/21
2/1/2021	8,444	19	270	2100	7.98	01/26/21
2/1/2021	7,170	16	270	2100	7.98	01/26/21
2/3/2021	7,194	18	300	2200	8.00	02/03/21
2/3/2021	8,427	21	300	2200	8.00	02/03/21
2/3/2021	7,161	18	300	2200	8.00	02/03/21
2/3/2021	8,549	21	300	2200	8.00	02/03/21
2/4/2021	7,249	18	300	2200	8.03	02/03/21
2/4/2021	8,468	21	300	2200	8.03	02/03/21
2/4/2021	7,252	18	300	2200	8.03	02/03/21
2/4/2021	8,535	21	300	2200	8.03	02/03/21
2/5/2021	7,101	18	300	2200	8.00	02/03/21
2/5/2021	7,348	18	300	2200	8.00	02/03/21
2/5/2021	8,492	21	300	2200	8.00	02/03/21
2/5/2021	8,547	21	300	2200	8.00	02/03/21
2/5/2021	7,281	18	300	2200	8.00	02/03/21
2/8/2021	7,151	18	300	2200	8.10	02/03/21
2/8/2021	8,439	21	300	2200	8.10	02/03/21
2/8/2021	8,458	21	300	2200	8.10	02/03/21
2/8/2021	7,213	18	300	2200	8.10	02/03/21
2/9/2021	7,189	18	300	2400	8.03	02/09/21
2/9/2021	8,410	21	300	2400	8.03	02/09/21
2/9/2021	8,458	21	300	2400	8.03	02/09/21
2/9/2021	7,106	18	300	2400	8.03	02/09/21
2/9/2021	8,384	21	300	2400	8.03	02/09/21
2/10/2021	7,228	18	300	2400	8.14	02/09/21
2/10/2021	8,396	21	300	2400	8.14	02/09/21
2/10/2021	8,374	21	300	2400	8.14	02/09/21
2/10/2021	7,077	18	300	2400	8.14	02/09/21
2/11/2021	8,393	21	300	2400	8.14	02/09/21
2/11/2021	8,376	21	300	2400	8.14	02/09/21
2/16/2021	8,453	11	150	2000	8.03	02/16/21
2/16/2021	8,355	10	150	2000	8.03	02/16/21
2/16/2021	7,120	9	150	2000	8.03	02/16/21
2/16/2021	8,381	10	150	2000	8.03	02/16/21
2/16/2021	8,391	10	150	2000	8.03	02/16/21
2/17/2021	7,050	9	150	2000	8.10	02/16/21
2/17/2021	7,225	9	150	2000	8.10	02/16/21
2/17/2021	7,149	9	150	2000	8.10	02/16/21
2/17/2021	7,216	9	150	2000	8.10	02/16/21
2/17/2021	8,345	10	150	2000	8.10	02/16/21
2/17/2021	7,074	9	150	2000	8.10	02/16/21
2/17/2021	7,187	9	150	2000	8.10	02/16/21
2/18/2021	8,353	10	150	2000	8.06	02/16/21
2/18/2021	7,106	9	150	2000	8.06	02/16/21
2/18/2021	8,290	10	150	2000	8.06	02/16/21
2/18/2021	7,031	9	150	2000	8.06	02/16/21
2/19/2021	7,209	9	150	2000	7.94	02/16/21
2/19/2021	8,458	11	150	2000	7.94	02/16/21
2/19/2021	6,978	9	150	2000	7.94	02/16/21
2/19/2021	8,518	11	150	2000	7.94	02/16/21
2/22/2021	6,851	9	150	2000	8.08	02/16/21
2/22/2021	8,580	11	150	2000	8.08	02/16/21
2/22/2021	7,120	9	150	2000	8.08	02/16/21
2/22/2021	8,559	11	150	2000	8.08	02/16/21
2/23/2021	7,199	16	270	2400	8.07	02/23/21
2/23/2021	8,621	19	270	2400	8.07	02/23/21
2/23/2021	8,580	19	270	2400	8.07	02/23/21
2/23/2021	7,091	16	270	2400	8.07	02/23/21
2/24/2021	8,264	19	270	2400	8.13	02/23/21
2/24/2021	7,187	16	270	2400	8.13	02/23/21
2/24/2021	8,604	19	270	2400	8.13	02/23/21
2/24/2021	7,233	16	270	2400	8.13	02/23/21
2/24/2021	7,278	16	270	2400	8.13	02/23/21
2/25/2021	7,153	16	270	2400	8.09	02/23/21
2/25/2021	8,609	19	270	2400	8.09	02/23/21
2/26/2021	7,115	16	270	2400	8.12	02/23/21
2/26/2021	8,628	19	270	2400	8.12	02/23/21
Total	538,116					

Note: pH levels measured by landfill personnel
Permitted maximum daily BOD (5 day) = 1,500 pounds

LABORATORY REPORT

EAI ID#: **221560**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 01/26/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 221560.01
Matrix: aqueous
Date Sampled: 1/26/21
Date Received: 1/26/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N	**930**	mg/L	1/27/21	9:00	4500NH3D-97	SEL
BOD	**270**	mg/L	1/27/21	10:47	5210B-11	RB
COD	**2100**	mg/L	2/01/21	9:55	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **221808**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/03/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 221808.01
Matrix: aqueous
Date Sampled: 2/3/21
Date Received: 2/3/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N **920**	mg/L	2/09/21	11:00	4500NH3D-97	SEL
BOD **300**	mg/L	2/04/21	10:55	5210B-11	RB
COD **2200**	mg/L	2/10/21	9:15	H8000	JCS

Eastern Analytical, Inc. www.easternanalytical.com | 800.287.0525 | customerservice@easternanalytical.com

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222097**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/09/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 222097.01
Matrix: aqueous
Date Sampled: 2/9/21
Date Received: 2/9/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N	**1100**	mg/L	2/16/21	13:00	4500NH3D-97	SEL
BOD	**300**	mg/L	2/10/21	12:00	5210B-11	KJD
COD	**2400**	mg/L	2/10/21	9:15	H8000	JCS

Eastern Analytical, Inc. www.easternanalytical.com | 800.287.0525 | customerservice@easternanalytical.com

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222320**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/16/2021**

Sample ID: NCES/Leachate

Lab Sample ID:	222320.01
Matrix:	aqueous
Date Sampled:	2/16/21
Date Received:	2/16/21

		Analysis			
	Units	**Date**	**Time**	**Method**	**Analyst**
Ammonia-N **910**	mg/L	2/23/21	8:30	4500NH3D-97	SEL
BOD **150**	mg/L	2/17/21	11:26	5210B-11	RB
COD **2000**	mg/L	2/19/21	9:40	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222539**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/23/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 222539.01
Matrix: aqueous
Date Sampled: 2/23/21
Date Received: 2/23/21

		Analysis				
		Units	**Date**	**Time**	**Method**	**Analyst**
Ammonia-N	**1000**	mg/L	3/04/21	13:15	TM NH3-001	ATA
BOD	**270**	mg/L	2/24/21	11:45	5210B-11	RB
COD	**2400**	mg/L	3/02/21	9:45	H8000	JCS

Eastern Analytical, Inc. www.easternanalytical.com | 800.287.0525 | customerservice@easternanalytical.com

New England Waste Services of Vermont, Inc. (Waste USA Landfill)
21 Landfill Lane, PO Box 348
Newport, VT 05855

New England Waste Services of Vermont, Inc.
21 Landfill Lane, P.O. Box 348
Newport, Vermont 05855

Certification Statement

Industrial Wastewater Permit Compliance Report
Date of Report: March 15, 2021

I certify that under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines or imprisonment for knowing violations.

Lindsey Menard
Permits, Compliance, and Engineering

	CONCORD WASTE WATER TREATMENT FACILITY						
	NEW ENGLAND WASTE SERVICES OF VERMONT LANDFILL - February 2021 Report						
	Date of Disposal	Volume (Gallons)	BOD (lbs)	BOD (mg/L)	COD (mg/L)	pH	Laboratory Analysis
PHASE 1							
			0				--
PHASE 2							
			0				--
PHASE 3 Cell I							
			0				--
PHASE 3 Cell II							
			0				--
PHASE 4							
			0				--
	Total gallons to CONCORD =	0					

Note: pH levels were measured by landfill personnel
Permitted maximum daily BOD (5 day) = 834 pounds

north country ENVIRONMENTAL SERVICES
A Casella Company
1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

March 15, 2021

Mr. Nicholas Fontaine
WRB Water Treatment Facility
NH DES, Water Division
Franklin, New Hampshire

RE: North Country Environmental Services, Inc
Leachate Disposal Permit No. 017-18
Schedule A Reporting – February 2021

Dear Mr. Fontaine:

NCES (North Country Environmental Services, Inc.) writes to provide the Schedule A Reporting for the trial period noted above.

Our records indicate that for the reporting period, leachate originating from the NCES landfill facility was delivered to the WRB WWTF.

Should you have any questions, please do not hesitate to contact me at 802.585.0551 or at lindsey.menard@casella.com.

Sincerely,

NORTH COUNTRY ENVIRONMENTAL SERVICES, INC.

Lindsey Menard
Permits, Compliance, and Engineering

Enclosures

c. John Gay, NCES
Kevin Roy, NCES
Annette Marquis, NCES

north country ENVIRONMENTAL SERVICES
A Casella Company
1855 Route 100 • Hyde Park, VT 05655 p. 802.223.7045

North Country Environmental Services, Inc.
581 Trudeau Rd., P.O. Box 9
Bethlehem, New Hampshire 03574

Certification Statement

Wastewater Permit Compliance Report

Date of Report: March 15, 2021

I certify that under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines or imprisonment for knowing violations.

Lindsey Menard
Permits, Compliance, & Engineering

WRB WASTE WATER TREATMENT FACILITY						
NORTH COUNTRY ENVIRONMENTAL SERVICES LANDFILL - February 2021 Report						
Date of Disposal	Volume (Gallons)	BOD 5 (lbs)	BOD (mg/L)	COD (mg/L)	pH	Laboratory Report Date
NCES/LEACHATE						
2/1/2021	8,590	19	270	2100	7.98	01/26/21
2/3/2021	8,511	21	300	2200	8.00	02/03/21
2/3/2021	8,513	21	300	2200	8.00	02/03/21
2/4/2021	8,573	21	300	2200	8.03	02/03/21
2/4/2021	8,480	21	300	2200	8.03	02/03/21
2/4/2021	8,465	21	300	2200	8.03	02/03/21
2/5/2021	8,458	21	300	2200	8.00	02/03/21
2/8/2021	8,556	21	300	2200	8.10	02/03/21
2/10/2021	8,451	21	300	2400	8.14	02/09/21
2/10/2021	8,343	21	300	2400	8.14	02/09/21
2/17/2021	8,400	11	150	2000	8.10	02/16/21
2/17/2021	8,355	10	150	2000	8.10	02/16/21
2/17/2021	8,355	10	150	2000	8.10	02/16/21
2/18/2021	8,331	10	150	2000	8.06	02/16/21
2/18/2021	7,158	9	150	2000	8.06	02/16/21
2/18/2021	7,247	9	150	2000	8.06	02/16/21
2/18/2021	8,319	10	150	2000	8.06	02/16/21
2/19/2021	8,338	10	150	2000	7.94	02/16/21
2/19/2021	8,472	11	150	2000	7.94	02/16/21
2/22/2021	8,588	11	150	2000	8.08	02/16/21
2/22/2021	8,573	11	150	2000	8.08	02/16/21
2/23/2021	8,585	19	270	2400	8.07	02/23/21
2/24/2021	8,640	19	270	2400	8.13	02/23/21
2/25/2021	8,559	19	270	2400	8.09	02/23/21
2/26/2021	8,674	20	270	2400	8.12	02/23/21
Page Total:	209,534					

Note: pH levels measured by landfill personnel
Permitted maximum daily BOD (5 day) = 1,500 pounds

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **221560**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 01/26/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 221560.01
Matrix: aqueous
Date Sampled: 1/26/21
Date Received: 1/26/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N	**930**	mg/L	1/27/21	9:00	4500NH3D-97	SEL
BOD	**270**	mg/L	1/27/21	10:47	5210B-11	RB
COD	**2100**	mg/L	2/01/21	9:55	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **221808**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/03/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 221808.01
Matrix: aqueous
Date Sampled: 2/3/21
Date Received: 2/3/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N **920**	mg/L	2/09/21	11:00	4500NH3D-97	SEL
BOD **300**	mg/L	2/04/21	10:55	5210B-11	RB
COD **2200**	mg/L	2/10/21	9:15	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222097**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/09/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 222097.01
Matrix: aqueous
Date Sampled: 2/9/21
Date Received: 2/9/21

		Analysis			
	Units	Date	Time	Method	Analyst
Ammonia-N	**1100**	mg/L	2/16/21	13:00	4500NH3D-97	SEL
BOD	**300**	mg/L	2/10/21	12:00	5210B-11	KJD
COD	**2400**	mg/L	2/10/21	9:15	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222320**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/16/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 222320.01
Matrix: aqueous
Date Sampled: 2/16/21
Date Received: 2/16/21

		Analysis			
	Units	**Date**	**Time**	**Method**	**Analyst**
Ammonia-N **910**	mg/L	2/23/21	8:30	4500NH3D-97	SEL
BOD **150**	mg/L	2/17/21	11:26	5210B-11	RB
COD **2000**	mg/L	2/19/21	9:40	H8000	JCS

LABORATORY REPORT

Exhibit AA to Aff. of Swan

EAI ID#: **222539**

Client: **North Country Env. Svcs., Inc. (NH)**

Client Designation: **NCES/Leachate | 02/23/2021**

Sample ID: NCES/Leachate

Lab Sample ID: 222539.01
Matrix: aqueous
Date Sampled: 2/23/21
Date Received: 2/23/21

		Analysis			
	Units	**Date**	**Time**	**Method**	**Analyst**
Ammonia-N **1000**	mg/L	3/04/21	13:15	TM NH3-001	ATA
BOD **270**	mg/L	2/24/21	11:45	5210B-11	RB
COD **2400**	mg/L	3/02/21	9:45	H8000	JCS

Critical Reviews in Environmental Science and Technology ›
Volume 51, 2021 - Issue 11

Research Article

Co-treatment of leachate in municipal wastewater treatment plants: Critical issues and emerging technologies

Recep Kaan Dereli, Eoghan Clifford & Eoin Casey

Pages 1079-1128 | Published online: 20 Apr 2020

Download citation https://doi.org/10.1080/10643389.2020.1745014

Full Article Figures & data References Citations Metrics

Reprints & Permissions Get access

Abstract

Solid waste management has become a global problem as the rate at which waste is generated exceeds population growth. Although it is not the most environment friendly option due to the inevitable generation of greenhouse gases and leachate, landfilling is globally still the most commonly applied waste disposal method. Leachate, an extremely polluted wastewater, threatens ground and surface waters and requires adequate treatment before discharge. Co-treatment of leachate in municipal wastewater treatment plants (WWTPs) is a commonly practiced method for leachate management. However, changing characteristics of leachate and more stringent discharge limits in WWTPs have led to questions about sustainability of co-treatment. On the other hand, several new technologies and processes, which can be adopted in conventional WWTPs, are now being deployed. For instance, floccular activated sludge has evolved to granule processes, shortcut denitrification processes can potentially lower the oxygen and carbon requirement for nitrogen

duration methods enhance energy efficiency, instrumentation, and control and automation capabilities have increased. This is the first dedicated review that compiles and critically evaluates studies concerning co-treatment of leachate and municipal wastewater. Moreover, potential concerns, challenges and opportunities for co-treatment are discussed in the context of new developments in wastewater treatment technology.

Graphical abstract

Keywords: Co-treatment landfill leachate nitrogen sewage wastewater treatment plant

Disclosure statement

No potential conflict of interest was reported by the author(s).

Additional information

Funding

This publication has emanated from research supported (in part) by Science Foundation Ireland (SFI) under the SFI Strategic Partnership Program Grant Number SFI/15/SPP/E3125. The opinions, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the Science Foundation Ireland.

Related research

People also read | Recommended articles | Cited by 7

Present and Long-Term Composition of MSW Landfill Leachate: A Review >

Peter Kjeldsen et al.
Critical Reviews in Environmental Science and Technology
Published online: 3 Jun 2010

Towards advanced nitrogen removal and optimal energy recovery from leachate: A critical review of anammox-based processes >

Jiongjiong Ye et al.
Critical Reviews in Environmental Science and Technology
Published online: 11 Jul 2019

Recent advances in membrane aerated biofilm reactors >

Duowei Lu et al.
Critical Reviews in Environmental Science and Technology
Published online: 9 Mar 2020

View more

State of Vermont

LAND USE PERMIT

CASE NO: 7R0841-13

New England Waste
Services of Vermont, Inc.
220 Avenue B
Williston, VT 05495

LAWS/REGULATIONS INVOLVED

10 V.S.A. §§ 6001 - 6093 (Act 250)

District Environmental Commission #7 hereby issues Land Use Permit #7R0841-13, pursuant to the authority vested in it by 10 V.S.A. §§ 6001-6093. This permit applies to the ± 1043 acres of land identified in Book 32 Pages 341-348, Book 62 Pages 545-548, Book 35 Pages 475-477 Book 38 Pages 363-366, Book 41 Pages 114-116, and Book 58 Pages 386-388 of the land records of the Town of Coventry, Vermont, as the subject of a deed to New England Waste Services of Vermont, Inc.

This permit specifically authorizes the Permittee to construct and operate Phase VI, to allow expansion and continued operation of the existing double-lined Landfill Facility, including phased development of an additional ± 51.2 acres of lined landfill capacity, expanded leachate management and gas control infrastructure, stormwater treatment ponds, greenhouses, and three contiguous soil stockpiles located south of Phase VI. This permit authorizes continued operation of the Facility, including Phase VI, for a period of time ending on June 30, 2028. The project is located on Airport Road in the Town of Coventry, Vermont.

Jurisdiction attaches because the Project constitutes a material change to a permitted development, and thus requires a permit amendment pursuant to Act 250 Rule 34.

1. The Permittee, and its assigns and successors in interest, are obligated by this permit to complete, operate and maintain the project as approved by the District Commission in accordance with the following conditions.

2. The project shall be completed, operated and maintained in accordance with: (a) the conditions of this permit, (b) Findings of Fact and Conclusions of Law #7R0841-12-A and #7R0841-13, and (c) the permit application, plans, and exhibits on file with the District Commission and other material representations.

3. All conditions of Land Use Permit #7R0841 and amendments are in full force and effect except as further amended herein.

4. Representatives of the State of Vermont shall have access to the property covered by this permit, at reasonable times, for the purpose of ascertaining compliance with Vermont environmental and health statutes and regulations and with this permit.

5. The Permittee shall comply with all of the conditions of the following Agency of Natural Resources Permits:

a. Wastewater System and Potable Water Supply Permit #WW-7-0240-4 issued on January 11, 2018 by the ANR Drinking Water and Groundwater Protection Division;

b. Title V Air Pollution Control Permit to Construct and Operate, AOP-17-018, issued by the Air Quality & Climate Division of ANR on August 1, 2018 (the "Air Permit");

c. Individual Stormwater Discharge Permit #4795-INDC.5 as amended, issued on November 28, 2017 by the ANR Watershed Management Division;

d. ANR Individual Construction Stormwater Discharge Permit # 4795-INDC.5A, issued on May 16, 2017 by the ANR Watershed Management Division;

e. Individual Wetland Permit #2016-067, issued on June 13, 2016 by the ANR Watershed Management Division;

f. Pretreatment Discharge Permit No. 3-1406, issued on November 4, 2011 by the ANR Wastewater Management Division;

g. Solid Waste Certification, issued on October 12, 2018 by the ANR-DEC Waste Management Division.

6. Any nonmaterial changes to the permits listed in the preceding condition shall be automatically incorporated herein upon issuance by the Agency of Natural Resources.

7. A copy of this permit and plans shall be on the site at all times throughout the construction process.

8. No change shall be made to the design, operation or use of this project without a permit amendment issued by the District Commission or a jurisdictional opinion from the District Coordinator that a permit is not required.

9. No further subdivision, alteration, and/or development on the tract of land approved herein shall be permitted without a permit amendment issued by the District Commission or a jurisdictional opinion from the District Coordinator that a permit is not required.

10. Pursuant to 10 V.S.A. § 8005(c), the District Commission may at any time require that the permit holder file an affidavit certifying that the project is in compliance with the terms of this permit.

11. The conditions of this permit and the land uses permitted herein shall run with the land and are binding upon and enforceable against the Permittee and its successors and assigns.

12. Permittee shall not erect additional exterior project signage without first obtaining approval from the District Commission. Signage includes banners, flags, and other advertising displays, excepting temporary real estate marking signs.

13. The Permittee and all assigns and successors in interest shall continually maintain the landscaping as approved in Exhibits #19 and #40 by replacing any dead or diseased plantings within the season or as soon as possible after the ground thaws, whichever is sooner.

14. Pursuant to the Commission's Findings of Fact and Conclusions of Law under Criterion 9(B), Exhibit 22, the Permittee shall, prior to commencement of construction of the Project, submit the calculated mitigation fee payment ($182,442.60) to the Vermont Housing and Conservation Board (VHCB), in order to compensate for the 142.2 acres of primary agricultural soils whose agricultural potential will be reduced or eliminated as a result of the Project. In the event that the Permittee does not submit the $182,442.60 mitigation fee corresponding to the 142.2 acres impacted by the Project within three (3) years of the August 18, 2017 date of issuance of the Criterion 9(B) Findings, then the Permittee shall instead submit the re-calculated mitigation fee corresponding to the acreage impacted, prior to commencement of construction of the Project; the required re-calculated mitigation fee shall be determined in the future based on the acreage impacted by the Project (142.2 acres) and based on the future per-acre cost to acquire conservation easements for primary agricultural soils in the geographic region of the Project, as determined in the future by the Secretary of the Vermont Agency of Agriculture, Food, and Markets (AAFM), and which will likely differ from and thus may exceed the current rate of $1,283 per acre cost to acquire conservation easements, thus may result in a higher fee to mitigate the 9(B) soils impacted by the Project.

15. For the duration of this permit, Permittee shall contract with an independent third party to monitor, investigate, and document landfill odor occurrences, respond quickly to off-site odor complaints, and inspect solid waste loads being delivered to the facility for nonconforming waste. The independent third party shall provide these services on a on a full-time basis.

    This independent third party may not be a current or former owner, officer, employee, or other such affiliate of Permittee or any subsidiary or parent company of Permittee. Nor shall such independent third party have worked on the project authorized by this permit either on behalf of Permittee or any other party to this permit proceeding. The third party shall be trained in odor detection and/or landfill construction, operation, and inspection and shall have the ability to respond via a site visit to investigate off-site odor complaints within 30 minutes of being notified of the complaint regardless of the time of day the complaint is received. Permittee shall grant access to the independent third party for the purposes of conducting such inspections.

    Prior to contracting with such independent third party, Permittee shall submit to the District Commission for its review and approval the identity of the proposed independent third party together with the proposed contract with such party. The Natural Resources Board, with the advice of the District Commission and the Agency of Natural Resources shall have the authority to terminate the contract with the third party. Any contract between Permittee and the third party shall account for this authority. In the event the Natural Resources board terminates the contract, Permittee shall enter into a contract with a replacement independent third party per the requirements of this condition.

    The independent third party shall report directly to the District Commission, Natural Resources Board, and the Agency of Natural Resources rather than Permittee. The third party may share information with the Permittee only after sharing it with the District Commission, Natural Resources Board, and the Agency of Natural Resources, and the Permittee shall not preview, prescreen, or filter any information flowing from the third party to these entities.

Permittee may apply to modify this requirement, (e.g. to reduce it to a part-time position, with use of odor monitoring technology), but the presence of a local third party inspector shall not be fully eliminated unless ANR positions a full time ANR staff person, trained in odors and dedicated full time to landfill inspections and oversight, who can be present on site within 30 minutes of a need.

16. Construction having potential to generate off-site noise will be limited to 6 AM to 6 PM weekdays and 7 AM to 6 PM on weekends, and no such construction shall occur on National Holidays

17. Facility hours of operation will remain unchanged (7:00 a.m. to 4:00 p.m., Monday through Friday and 7:00 a.m. to 11:30 a.m. on Saturday). These are the hours when trucks may dump waste at the active area(s) of the landfill. The landfill gate may open at 6:00 a.m. so that trucks may queue on landfill property. Arrivals and queuing before 6:00 a.m. is strictly prohibited, queuing along public roads is strictly prohibited, and Permittee shall so educate truck drivers. In addition, operations that generate off-site noise shall be limited to 6 a.m. to 5 p.m. weekdays and 7 a.m. to 12 p.m. noon on weekends, however the landfill operator may start equipment and move daily cover around, at the active landfill area, not earlier than 6:30 a.m.(in preparation for the arrival of the first trucks carrying waste, commencing not earlier than 7 a.m.)

18. a. Disposal of landfill leachate from the Facility, including that generated from all Phases of the landfill (Phase I-IV) and from Phase VI, is not permitted at the Newport WWTF. Permittee may not dispose of leachate at the Newport WWTF, nor dispose of landfill leachate on-site or elsewhere within the watershed of Lake Memphremagog, without Act 250 permit amendment. This restriction shall take effect 90 days from the date of issuance of this permit.

b. Permittee may apply for Act 250 permit amendment, to modify this restriction, if such an amendment application is supported by new science, new technology and/or or new data which demonstrates, or seeks to demonstrate, that the risk to the Lake Memphremagog water quality (drinking water supply) will not be unduly adverse.

c. Permittee shall apply for an Act 250 permit amendment for any change to its method of leachate management, pre-treatment, and disposal, including but not limited to construction of on-site treatment systems.

d. Permittee shall submit a copy of its study of treatment options for leachate management (two onsite and two offsite, with both studies to be completed by October 12, 2019) to the District Commission for its file.

19. The Permittee shall submit an annual evaluation of impacts to ground and surface water quality, from the unlined landfill areas on the Property, to the Commission, and to all Parties admitted under Criterion 1(B). The evaluation shall include a recommendation concerning relocation of the waste from the unlined landfill areas, into lined Landfill areas, based on the current data and science.

20. a. In addition to the ANR approved financial responsibility instrument in the Permit covering the post closure period, NEWSVT shall establish an additional environmental integrity trust fund ("Phase VI Trust Fund") for the benefit of the ANR. The trustee of the Phase VI Trust Fund shall be an institution acceptable to the Parties. Upon appointment of the trustee, NEWSVT shall report the identity of the trustee to the District #7 Commission.

b. NEWSVT shall annually deposit an amount equal to $0.20 + per ton ("Phase VI Trust Fund Fee", to be adjusted annually for inflation based on a base rate of $0.20 (2006), as identified in the Commission's Findings) of solid waste accepted for disposal at the Coventry Landfill into the Phase VI Trust Fund during the respective year of operation (accepting solid waste for disposal) of the Coventry Landfill. The Phase VI Trust Fund fees shall only be payable for solid waste disposed of in Phase VI of the Coventry Landfill. The first annual deposit of the Phase VI Trust Fund Fee to the Phase VI Trust Fund shall be made one year from the date that solid waste is first disposed of in Phase VI of the Coventry Landfill and subsequent deposits shall be made annually thereafter on the anniversary of such date. NEWSVT shall report to the District #7 Commission, ANR, and MRCM the date that waste is first disposed of in Phase VI.

c. The Phase VI Trust Fund shall be used only after the currently regulated thirty (30) year Phase VI post-closure period, and only for the following purposes: (1) maintenance of the Coventry Landfill required by the ANR; and (2) corrective measures required by the ANR and for mitigation of damages caused by the landfill.

d. The Phase VI Trust Fund may serve as evidence of compliance with any future financial responsibility required by the ANR or federal EPA regulations for the period of time beyond post-closure. If funds in the Phase VI Trust Fund are less than that required to comply with any such ANR or federal EPA requirements, NEWSVT shall supplement such Phase VI Trust Funds with additional financial responsibility instruments in a manner that satisfies such requirements. The ANR shall return to NEWSVT the difference between the funds in the Phase VI Trust Fund and the amount required to comply with any ANR or federal EPA requirements.

e. The Phase VI Trust Fund shall be terminated, and the remaining funds shall be returned to NEWSVT or its successor entity upon written confirmation from the ANR that the Phase VI Trust Fund is no longer required to maintain financial responsibility for the Coventry Landfill.

21. Installation of synthetic Closure Turf (as a component of final closure system) is not permitted. Prior to installation of Closure Turf (as a component of the final closure system) a permit amendment must be submitted to the District Commission for additional review and approval.

22. In addition to conformance with all erosion prevention and sediment control conditions, the Permittee shall not cause, permit or allow the discharge of waste material into any surface waters. Compliance with the requirements of this condition does not absolve the

Permittee from compliance with 10 V.S.A. (§§ 1250-1284) Chapter 47, Vermont's Water Pollution Control Law.

23. The Permittee shall provide each prospective purchaser of any interest in this Project a copy of the approved plan and the Land Use Permit before any written contract of sale is entered into.

24. Permittee shall pay the remaining application fee due ($24,750), pursuant to the fee waiver decision (MOD dated July 22, 2019), to the Natural Resources Board, within 30 days of issuance of this decision.

25. The Permittee shall reference the requirements and conditions imposed by Land Use Permit #7R0841-13 in all deeds of conveyance and leases.

26. This permit amendment shall expire on **June 30, 2028**, unless extended by the District Environmental Commission. If this permit is not renewed (extended), Permittee shall submit an updated closure plan for Commission review and approval, prior to installing the final closure system.

27. All site work and construction shall be completed in accordance with the approved plans by June 30, 2028, unless an extension of this date is approved in writing by the Commission. Such requests to extend must be filed prior to the deadline and approval may be granted without public hearing.

28. The Permittee shall file a Certificate of Actual Construction Costs, on forms available from the Natural Resources Board, pursuant to 10 V.S.A. § 6083a(g) within one month after construction has been substantially completed or two years from the date of this permit, whichever shall occur first. Application for extension of time for good cause shown may be made to the District Commission. If actual construction costs exceed the original estimate, a supplemental fee based on actual construction costs must be paid at the time of certification in accordance with the fee schedule in effect at the time of application. Upon request, the Permittee shall provide all documents or other information necessary to substantiate the certification. Pursuant to existing law, failure to file the certification or pay any supplemental fee due constitutes grounds for permit revocation. The certificate of actual construction costs and any supplemental fee (by check payable to the "State of Vermont") shall be mailed to: Natural Resources Board, 10 Baldwin Street, Montpelier, VT 05633-3201; Attention: Certification.

29. Failure to comply with any condition herein may be grounds for permit revocation pursuant to 10 V.S.A. sec. 6027(g).

Dated at St. Johnsbury, Vermont, this 23rd day of July, 2019.

By */s/ Eugene Reid*
Eugene Reid, Chair
District #7 Commission

Members participating in this decision: Keith Johnson, Nicole Davignon

Any party may file a motion to alter with the District Commission within 15 days from the date of this decision, pursuant to Act 250 Rule 31(A).

Any appeal of this decision must be filed with the Superior Court, Environmental Division within 30 days of the date the decision was issued, pursuant to 10 V.S.A. Chapter 220. The Notice of Appeal must comply with the Vermont Rules for Environmental Court Proceedings. The appellant must file with the Notice of Appeal the relevant entry fee required by 32 V.S.A. § 1431.

The appellant must also serve a copy of the Notice of Appeal on the Natural Resources Board, 10 Baldwin Street, Montpelier, VT 05633-3201, and on other parties in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

Decisions on minor applications may be appealed only if a hearing was held by the district commission. Please note that there are certain limitations on the right to appeal, including appeals from Administrative Amendments and interlocutory appeals. See 10 V.S.A. § 8504(k), 3 V.S.A. § 815, and Vermont Rule of Appellate Procedure 5.

For additional information on filing appeals, see the Court's website at: http://www.vermontjudiciary.org/GTC/environmental/default.aspx or call (802) 951-1740. The Court's mailing address is: Vermont Superior Court, Environmental Division, 32 Cherry Street, 2nd Floor, Suite 303, Burlington, VT 05401.

CERTIFICATE OF SERVICE

I hereby certify that I, sent a copy of the foregoing documents Memorandum of Decision, Findings of Fact and Conclusions of Law and Order and Permit Amendment #7R0841-13 for New England Waste Services of Vermont, Inc., Williston VT by U.S. Mail, postage prepaid to the following individuals without e-mail addresses and by e-mail to the individuals with e-mail addresses listed, on this 23rd day of July, 2019.

Note: Any recipient may change its preferred method of receiving notices and other documents by contacting the District Office staff at the mailing address or e-mail below. If you have elected to receive notices and other documents by e-mail, it is your responsibility to notify the Act 250 office of any e-mail address changes.

New England Waste Services of Vermont, Inc.
220 Avenue B
Williston, VT 05495
john.gay@casella.com
teustace@gravelshea.com
bbeaudoin@sanbornhead.com
jgrace@sanbornhead.com
kmercure@gravelshea.com
samuel.nicolai@casella.com
cheindel@gmavt.net
shelley.sayward@casella.com
mbyrne@gravelshea.com
jpolubinski@gravelshea.com

Town of Coventry
ATTN: Select Board
PO Box 104
Coventry, VT 05825
clerk@coventryvt.org
selectboardclerk@coventryvt.org

Town of Coventry
Planning Commission
PO Box 8
Coventry, VT 05825
planningcommission@coventryvt.org

Northeastern Vermont Development Association
PO Box 630
St. Johnsbury, VT 05819
dsnedeker@nvda.net
inaigle@nvda.net

Agency of Natural Resources
Office of Planning & Legal Affairs
1 National Life Drive
Davis 2
Montpelier, VT 05620-3901
ANR.Act250@vermont.gov
elizabeth.lord@vermont.gov
jennifer.mojo@vermont.gov

Vermont Agency of Transportation
Utilities and Permits
ATTN: Craig Keller
One National Life Drive
Drawer 33
Montpelier, VT 05633
craig.keller@vermont.gov
jennifer.l.davis@vermont.gov
nathan.covey@vermont.gov
kyle.wells@vermont.gov
daniel.delabruere@vermont.gov
rollin.tebbetts@vermont.gov

Vermont Agency of Agriculture, Food and Markets
116 State Street, Drawer 20
Montpelier, VT 05620-2901
ari.rockland-miller@vermont.gov
AGR.Act250@vermont.gov

Division for Historic Preservation
ATTN: Scott Dillon
ATTN: James Duggan
National Life Building, 6th Floor
Drawer 20
Montpelier, VT 05620-0501
scott.dillon@vermont.gov
james.duggan@vermont.gov

Dan Gauvin
2260 Airport Road
Newport, VT 05855
dan@lakeviewaviation.com

Chris Roy
Rosemarie Roy
723 Maple Ridge
Newport, VT 05855
josephroy723@comcast.net
rosemarieroy@comcast.net

Memphremagog MRC
455 rue MacDonald
Magog, PQ, Canada J1X 1M2
michel.cyr@ville.sherbrooke.qc.ca
g.jauron@mrcmemphremagog.com
l.maille@municipalite.austin.qc.ca
araubvogel@dunkielsaunders.com
gbergeron@dunkielsaunders.com

For Your Information:

District #7 Environmental Commission
Eugene Reid, Chair
Keith Johnson, Nicole Davignon
374 emerson Falls Road, Suite 4
St. Johnsbury, VT 05819
NRB.act250stj@vermont.gov
kirsten.sultan@vermont.gov

City of Newport
222 Main Street
Newport, VT 05855
laura.doglin@newportvermont.org
paul.monette@newportvermont.org

Tom Stelter
trstelter@gmail.com

Mary Clark
dreamdeepr@aol.com

Robert Fortunati
bfortunati@blodgettsupply.com

Henry Coe
henrycoevt@gmail.com

Ariane Orjikh
Memphremagog Conservation, Inc.
info@memphremagog.org

Newport Daily Express
Hill Street
Newport, VT 05855
ejgbarber1958@yahoo.com

Robin Smith,
Orleans County Record
rsmith-caledonianrecord@comcast.net
news@caledonian-record.com

Elizabeth Gribkoff
VTDigger.org
egribkoff@vtdigger.org
DUMP
PO Box 1402
Newport, VT 05855
nolakedump@gmail.com
charliepronto@rocketmail.com
aancel@ancelarygroup.com

Magog-Orford County
adj@bgolegal.ca

Robert Dessureault
robertdessureault@cgocable.ca

Sylvie Matteau
smatteau1@gmail.com

Carole Descoteaux
descoc@hotmail.com

Marc Normandin
Marc.Normandin@egonzehnder.com

Maryanna Williams
maryanna.williams10@gmail.com

Karina Palmorino
karina.palmorino@sympatico.ca

Eleanor Ward
el.ward@icloud.com

Ken & Shirley Elliott
kelliott@videotron.ca

Stephanie Desmeules
ninibottine@hotmail.com

Blanche Paquette
blanche.paquette@municipalite.austin.qc.ca

Scott Brisbin
scott@drscottbrisbin.com

Anita MacKay
mac1459@msn.com

Ginette Sabourin
sabourin.ginette@videotron.ca

Murielle Depault
mudepault@mail.com

Aurelie Hawes
aureliehawes93@gmail.com

Renaissance Lac Brome
Jean-Claude Gingras
jean.claude.gingras@renaissancelbl.com
hdrouin55@gmail.com

Marjolaine Caron
caronmarjolaine@gmail.com

Richard Tarte
richard.tarte@gmail.com

Claire Labelle
clabelle1958@gmail.com

Leslie Farfan
info@terencehawesfinancial.ca
sparble@videotron.ca

Gilbert Gosselin
g.gosselin@videotron.ca

Jean-Guy Forcier
beaufor@cgocable.ca
James Murray
ipam2012@gmail.com

Lucie Martel
lucie@lmartel.com

Gaetan Rouleau
gaetroul@icloud.com

Anne-Marie Bourcier
ambourcier@hotmail.com

Isabelle Verrier
isabelleverrier7@gmail.com

Judi Jacobi
junglejuditailwind@gmail.com

Frederic Leblanc
leblancfrederic89@gmail.com

Francis Laplante
francois@folcocapital.ca

Sylvain Poudrette
sypoudrette@gmail.com

Lise Cloutier
cloutierlise30@icloud.com

Jean-Guy Saint-Martin
jgsaintmartin@hotmail.com

Association Riveire Magog, Inc.
Richard Cyr
Richard.Cyr@associationrivieremagog.org

Louise Fontaine
lfontaine@cgocable.ca

Jean-Paul Labelle-Hallee
jp.hallee@hotmail.com

Chris Poirier-Marshall
chrispoiriermarshall@gmail.com

Scott Sulli
intheuae@gmail.com

Claude M. Gosselin
tarponcmg@gmail.com
Robert Setlakwe
Roberts@saint-hilaire-inc.com

Michel Charpentier
michel3393@videotron.ca
Yves Messier
yvmess@gmail.com

Veronique Le Kim
vlekim@drassel.ca

Pierre Desjardins
pdes63@gmail.com
Pierre Legault
legault.pierre@gmail.com

Marek Nitoslawski
mnitos56@gmail.com

Jacques Duquette
jacquesduquette@hotmail.com

Linda Ghanime
linda.ghanime@gmail.com

Catherine Beaudoin
cbeaudoin@sqi.gouv.qc.ca

Line Laurin
llaurin@archilaurin.com

Levis Doucet
levisdoucet@me.com

Eric Vallieres
evallieres@me.com

Joanne Ross
jrossfontaine@gmail.com

Madeleine Saint-Pierre
saintpierremadeleine@iteract.ca

Nicole Beaulac
nicole.a.beaulac@gmail.com

Marie-Odile & Jean Bugnet
mobugnet@videotron.ca

Rene Lepine
renlep40@gmail.com

Francine Gaudette
francine.gaudette@gmail.com

Jacques Beliveau
j.beliveau@sympatico.ca

Ann Power
aphpower@gmail.com

Yves Bergevin
yves.bergevin@mcgill.ca

Daniel Davignon
danieldavignon@me.com

Gisele Lacasse
giselelacasse@axion.ca

Renee Morin
reneemorin1@hotmail.com

Diane Frenette
fred1510@hotmail.com

Jean-Denis Talon
talonjd@hotmail.com

Kate & Roger Williams
kate.williams@mcgill.ca

Community Association of Georgeville
Allan Smith, President
allan.smith@umontreal.ca

Nathalie Nadeau
natnadeau@live.ca

Kay Jarvis
kwjarvis@shaw.ca

Real D'anjou
danjou.com@hotmail.com

Buffy Packard
buffy.packard@gmail.com

Robert Benoit
robertbenoit1944@gmail.com

Jean-Claude Duff
jc.duff@municipalite.austin.qc.ca

Robert Gagne
gagne.robert.g@sympatico.ca

Manon Bonneau
manonbonneau@icloud.com

Francine Laurier & Denis Charest
flaucha@hotmail.com

JL Gauvin
jgauvin@sympatico.ca

Assemblee Nationale du Quebec
gilles.belanger@assnat.qc.ca
alexandra.roy@assnat.qc.ca

Veronique Thibault
Appalachian Corridor
veronique.thibault@corridorappalachien.ca

Judy Hopps
Memphremagog Wetlands Foundation
judy.hopps@sympatico.ca

Brian Herman
Turkey Hill Sugarbush
brian@turkeyhill.ca

Joanne Sarrasin
APLMagog
info@aplm.ca

Denis Paradis
MP Brome Missiquoi
isabmarjorie@videotron.ca
denis.paradis.A1@parl.gc.ca
roxannetremblay19@hotmail.com
brome.missisquoi@gmail.com

John Tuthill
PO Box 49
Acworth, NH 03601
jtuthill@sover.net

Conservation Law Foundation
jcusimano@clf.org
emihaly@clf.org
jduggan@clf.org

Frederick Webster
378 Webster Road
Orleans, VT 05860-9163

Jay Ancel
jaya@blackriverdesign.com
tomlatta@together.net

The Chronicle
Joseph Gresser
joseph@bartonchronicle.com

La Tribune
Jean-Francois Gagnon
jean-francois.gagnon@latribune.qc.ca

Gina St Sauveur
Natural Resources Board
Technician

https://www.caledonianrecord.com/opinion/letters/casella-offer---cliff-crosby/article_f0bf9f07-9481-5cdf-9d96-236a92a8e44c.html

Casella Offer - Cliff Crosby

Sep 4, 2020

Casella Offer

To the Editor:

I will be 92 this Friday. I have lived through 7 pandemics, 7 wars, 7 financial crises and a 25 year fight over a landfill. Before I go, I would love to see one more example of coming together to solve a problem comparable to what we did as a country to solve the Great Depression and World War II.

John Casella offered Bethlehem $75 million over 25 years and now Dalton a comparable offer over a longer period. In the midst of a combined pandemic/depression, it would be irresponsible not to consider this offer carefully and come up with a win-win solution for all concerned.

I would suggest a small group from Bethlehem, Dalton and Casella work together to find such a solution.

Cliff Crosby

Bethlehem, N. H.

CLIFF CROSBY
45 HEDGEROSE LN
BETHLEHEM NH 03574

PRSRT STD
ECRWSS
U.S. POSTAGE
PAID
EDDM RETAIL

LOCAL POSTAL CUSTOMER

PATCHES

TOBY

WE LOVE CASELLA!

REMINDER

TOWN MEETING
Tuesday, March 10
TOWN HALL 8 am to 8 pm
or vote absentee now @ Town Clerk

CLIFF CROSBY
869-2582

STEPHEN YANCEY
838-0012

WE NEED YOUR VOTE!

THE ONLY CANDIDATES TO:

1. PROMISE $2 MILLION PER YEAR COLD CASH.

2. PROMISE FREE PICK UP OF YOUR TRASH & RECYCLABLES.

3. PROMISE FREE, CONVENIENT TRANSFER STATION - SWAP SHOP.

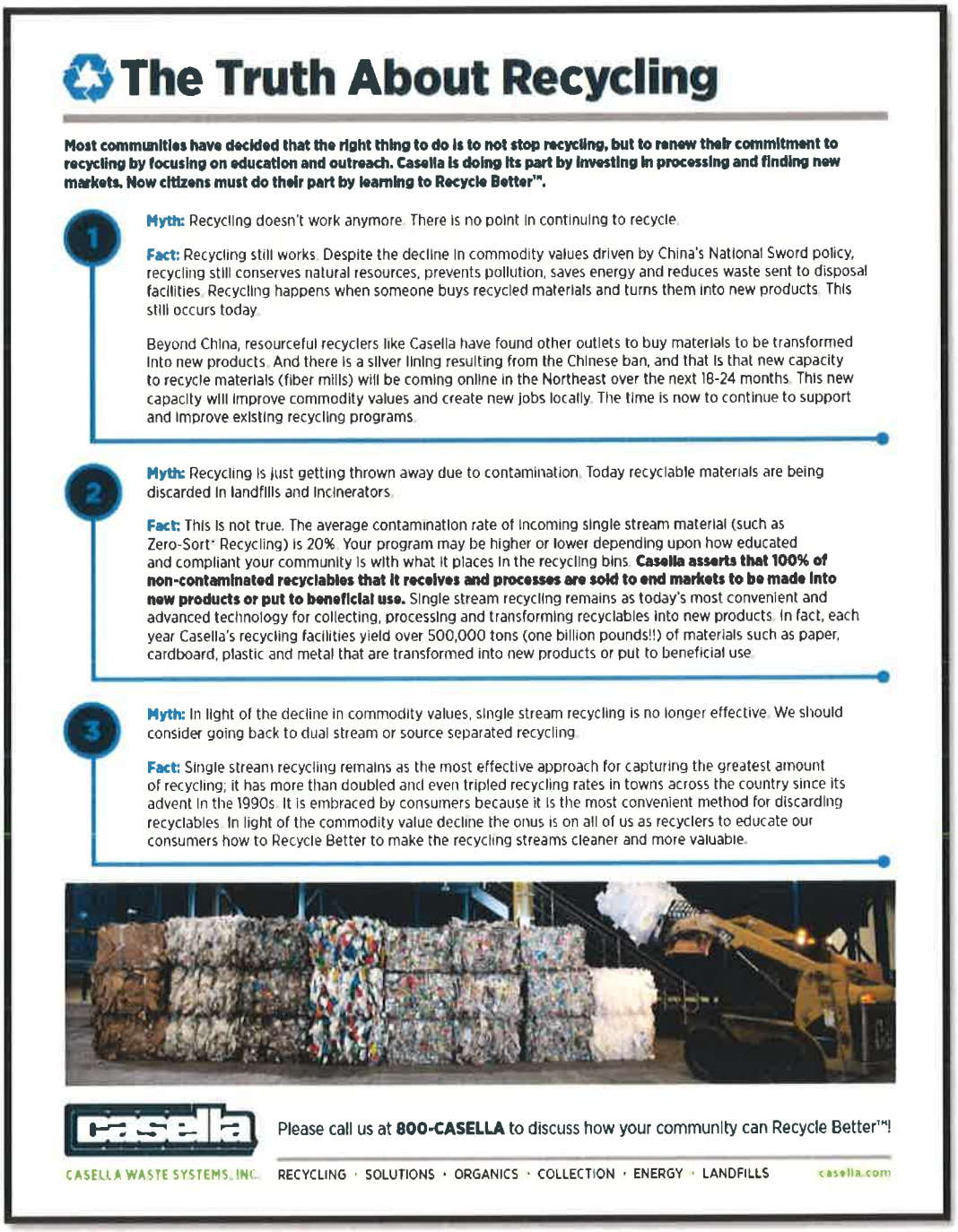
DEPENDING ON THIS VOTE...

THERE WILL BE A $12 PER THOUSAND SWING IN YOUR TAX RATE.

YOUR TAX RATE WILL EITHER GO UP TO $32 OR DOWN TO $20.

THESE CANDIDATES OFFER FINANCIAL STABILITY & IMPROVED ENVIRONMENT.

VOTE FOR THE
CROSBY - YANCEY
TICKET



The Truth About Recycling

Most communities have decided that the right thing to do is to not stop recycling, but to renew their commitment to recycling by focusing on education and outreach. Casella is doing its part by investing in processing and finding new markets. Now citizens must do their part by learning to Recycle Better™.

1

Myth: Recycling doesn't work anymore. There is no point in continuing to recycle.

Fact: Recycling still works. Despite the decline in commodity values driven by China's National Sword policy, recycling still conserves natural resources, prevents pollution, saves energy and reduces waste sent to disposal facilities. Recycling happens when someone buys recycled materials and turns them into new products. This still occurs today.

Beyond China, resourceful recyclers like Casella have found other outlets to buy materials to be transformed into new products. And there is a silver lining resulting from the Chinese ban, and that is that new capacity to recycle materials (fiber mills) will be coming online in the Northeast over the next 18-24 months. This new capacity will improve commodity values and create new jobs locally. The time is now to continue to support and improve existing recycling programs.

2

Myth: Recycling is just getting thrown away due to contamination. Today recyclable materials are being discarded in landfills and incinerators.

Fact: This is not true. The average contamination rate of incoming single stream material (such as Zero-Sort® Recycling) is 20%. Your program may be higher or lower depending upon how educated and compliant your community is with what it places in the recycling bins. **Casella asserts that 100% of non-contaminated recyclables that it receives and processes are sold to end markets to be made into new products or put to beneficial use.** Single stream recycling remains as today's most convenient and advanced technology for collecting, processing and transforming recyclables into new products. In fact, each year Casella's recycling facilities yield over 500,000 tons (one billion pounds!!) of materials such as paper, cardboard, plastic and metal that are transformed into new products or put to beneficial use.

3

Myth: In light of the decline in commodity values, single stream recycling is no longer effective. We should consider going back to dual stream or source separated recycling.

Fact: Single stream recycling remains as the most effective approach for capturing the greatest amount of recycling; it has more than doubled and even tripled recycling rates in towns across the country since its advent in the 1990s. It is embraced by consumers because it is the most convenient method for discarding recyclables. In light of the commodity value decline the onus is on all of us as recyclers to educate our consumers how to Recycle Better to make the recycling streams cleaner and more valuable.

Figure 6 - Marketing materials distributed to local communities to encourage continued participation in recycling programs.

Save Forest Lake

@DumpCasella · Environmental Conservation Organization

Follow

Home Groups Reviews Videos More

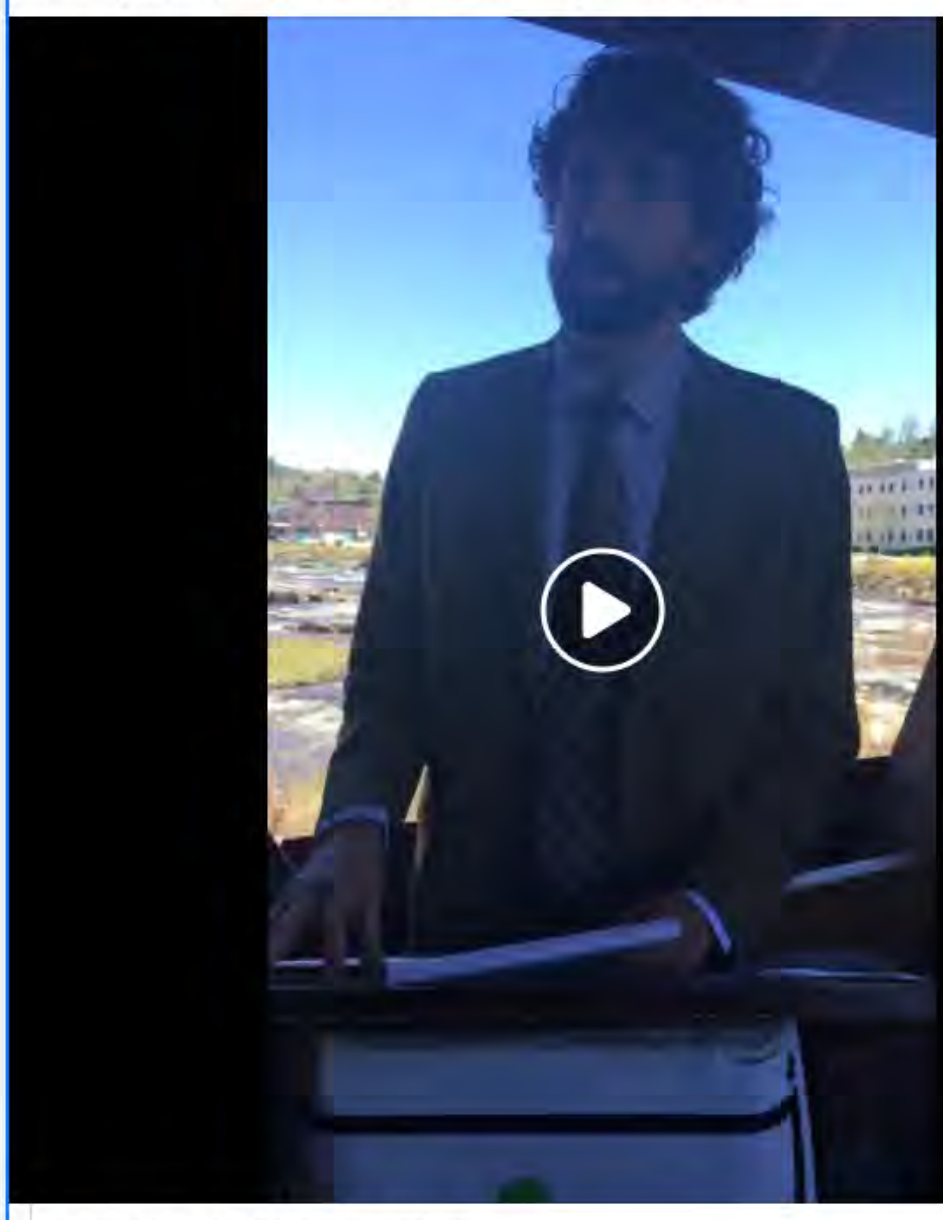
Like Message

Save Forest Lake
December 17, 2020 ·

Video from 2018 announcing the lawsuit vs Casella/NCES over violating the Federal Clean Water Act. The lawsuit alleges illegal discharges of pollutants from the companies' Bethlehem landfill into the Ammonoosuc River. A drainage channel at the landfill, operated by NCES, collects landfill pollutants and discharges those pollutants into the Ammonoosuc River, without a discharge permit, as required by the federal Clean Water Act.

Casella and NCES sought to have the case dismissed on three grounds: that Community Action Works and Conservation Law Foundation did not have standing to bring suit; that the discharges from the drainage channel did not require a Clean Water Act permit; and that Casella is not a proper defendant.

U.S. District Judge Paul Barbadoro denied the motion to dismiss on all three grounds. We are still awaiting word on when the Supreme Court may hear this suit.



Growing Without Garbage was live.
May 14, 2018 ·

The lawsuit has arrived folks.

Toxics Action Center & Conservation Law Foundation have filed a lawsuit against Casella/NCES for violation of the clean water act.

2 1 Comment

Like Comment Share

All Comments

Write a comment...

Author
Save Forest Lake
And this was Casella's response to suit, which does seem to be their typical, dismissive, canned response:
"Casella provided this statement to Robert Blechl of the Caledonian-Record:
NCES does not comment on threatened litigation. NCES will vigorously defend against these baseless claims if the out-of-state interest groups actually file the lawsuit they have threatened. It is worth noting that the NH Department of Environmental Services subjects the landfill and groundwater and surface water in the vicinity to exacting oversight and regulation, yet DES never concluded that the landfill is contaminating the river.
We'll state the obvious. This is pure theater, produced in partnership with extremist lawyers from Massachusetts. It's more about the anti-landfill crowd desperately trying to salvage a weak campaign, and less about a genuine concern for the environment. Tiresome, and laughably
unimaginative.
Clearly, this is a campaign charade and yet another distortion and tired attempt to distract voters from the very real fact that the radical landfill opponents have no plan for Bethlehem's future, and no concern for the economic health and future of their neighbors."
https://img1.wsimg.com/.../NCES%20Statement%20on...

Like · Reply · 9w · Edited

Write a comment...

Tweet

SaveForestLake
@SaveForestLake1

When Casella weaponizes the legal system: img1.wsimg.com/blobby/go/3a99... A sad reality, meant to silence those who oppose them. NH deserves better than this company. @grayno2 @nancywestnews @aropeik @amyWMUR @KlandriganUL @BostonGlobe @KirstiePecci @pfasprojectnh @WendyENThomas

11:18 PM · Jun 7, 2021 · Twitter Web App

2 Likes

Tweet your reply

Reply

More Replies

James Dorr @Jamesdorr · Jun 7, 2021
Replying to @SaveForestLake1 @grayno2 and 8 others
That's too bad but not a surprise. These GQP folks play dirty as their signs imply.

THE STATE OF NEW HAMPSHIRE
JUDICIAL BRANCH
NH CIRCUIT COURT

1st Circuit - District Division - Lancaster
55 School St., Suite 201
Lancaster NH 03584

Telephone: 1-855-212-1234
TTY/TDD Relay: (800) 735-2964
http://www.courts.state.nh.us

July 02, 2021

ROBERT S. CAREY, ESQ
ORR & RENO PA
45 SOUTH MAIN STREET SUITE 400
PO BOX 3550
CONCORD NH 03302-3550

Case Name: **Vanessa Cardillo v. Jon Swan**
Case Number: **451-2021-CV-00017**

See attached Stalking Final Order of Dismissal dated 7/2/2021.

/s/ Honorable Janet H. Subers, 7/2/2021

Terri L. Peterson
Clerk of Court

(887)

C: Vanessa Cardillo; Jon Swan

THE STATE OF NEW HAMPSHIRE
JUDICIAL BRANCH
NH CIRCUIT COURT

STALKING FINAL ORDER OF DISMISSAL

Case Number: 451-2021-CV-00017
PNO Number: 4512120017
Court: 1st Circuit - District Division - Lancaster
Court ORI: NH004051J
County: Coos
Address 55 School St., Suite 201 Lancaster NH 03584

PLAINTIFF			PLAINTIFF IDENTIFIERS
First	Middle	Last	Date of Birth of Plaintiff
Vanessa		Cardillo	08/29/1985

V.

DEFENDANT			DEFENDANT IDENTIFIERS			
First	Middle	Last	DOB	04/11/1966	HEIGHT	5 Ft. 11 In.
Jon		Swan	SEX	Male	WEIGHT	200 Lbs.
DEFENDANT'S ADDRESS: 25 Cashman Road Dalton NH 03598			RACE	White	EYES	Brown
			State/Birth	Ohio	HAIR	Brown

The Court having jurisdiction over the parties and subject matter under New Hampshire RSA 633:3-a (Stalking), having considered the plaintiff's Stalking Petition and having conducted a hearing on 07/01/2021, of which the defendant received actual notice, and was ☒ was not ☐ present, hereby finds that:

☒ The Plaintiff has NOT been stalked as defined in RSA 633:3-a: CASE DISMISSED

The Court finds that Plaintiff did not establish by a preponderance of the evidence that Defendant has committed the act of stalking. Per the statutory definition of "course of conduct", such course of conduct shall not include constitutionally protected activity, nor shall it include conduct that was necessary to accomplish a legitimate purpose independent of making contact with the targeted person. While Defendant did post videos of Plaintiff online, these videos were made during a public town meeting. Other people also videotape these meetings and broadcast or post them online. There was no testimony that Defendant threatened the safety of the Plaintiff or that he committed any other acts included in the definition of course of conduct. The case is **DISMISSED**.

July 2, 2021
Date

Janet H Subers
Signature of Judge

1-855-212-1234
Telephone Number of Court

Hon. Janet H. Subers
Print / Type Name of Judge