



Operated By
NEWSME Landfill Operations, LLC

January 30, 2020

Tanya Hovell
Maine Dept. of Environmental Protection
Bureau of Air Quality
106 Hogan Road
Bangor, Maine 04401

RE: NEWSME Landfill Operations, LLC
DBA Juniper Ridge Landfill (JRL)
(formerly West Old Town Landfill)
Part 70 Air Emission License #A-921-70-B-R
Semiannual & Annual Compliance Certifications

Dear Ms. Hovell:

Please find enclosed Juniper Ridge Landfill's semiannual certification for the period ending December 31, 2019, and annual certification for 2019.

If you should require any additional information regarding the enclosed, please feel free to contact me at (207) 249-8025.

Sincerely,

Jeffrey Pelletier
Environmental Manager
NEWSME Landfill Operations, LLC

Enclosure: Part 70 Air Emission License Semiannual and Annual Certifications
Semiannual Periodic Monitoring Report for the GCCS

Cc: EPA – Region 1
Toni King, Casella Waste Systems, Inc.
Wayne Boyd, NEWSME Landfill Operations, LLC
John Blais, Bureau of General Services, State of Maine

Semiannual and Annual Report Certification Cover Sheet

Facility Name	NEWSME Landfill Operations, LLC DBA Juniper Ridge Landfill (formerly West Old Town Landfill)
License Number	A-921-70-B-R
Period Covered By Certification	07/01/2019 to 12/31/2019 – semiannual 01/01/2019 to 12/31/2019 – annual
Total Number of Pages Submitted in Certification (including certification sheet)	39

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, I believe the information included in the attached document is true, complete, and accurate.



Toni King
Regional Engineer
NEWSME Landfill Operations, LLC.

Date 30 JAN 20

PERIODIC MONITORING REPORT FORM

Facility Name Juniper Ridge Landfill License Number A-921-70-B-R From 1 Jul to 31 Dec 2019
 (month) (month) (year)

Condition ID	Emission Source / Control Device	Periodic Monitoring Parameter	Monitoring Frequency	Limit (From license)	Summary
(14)(B)	Subpart WWW Gas Collection and Control System	Design and construct system with no line for gas to bypass control devices	N/A	LFG collection system design criteria	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(14)(B)	Subpart WWW Gas Collection and Control System	Operate and maintain system at least 15 years	Every 15 minutes for flow, continuous for presence of flame	No downtime in excess of five days	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(14)(B)	Subpart WWW Gas Collection and Control System	Areas of the Landfill where Gas Collection is Required	Monthly	Collect LFG from areas with 5 or more years of waste; and closed areas with 2 or more years	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(14)(B)	Subpart WWW Gas Collection and Control System	Wellhead pressure ¹	Monthly (minimum)	Negative pressure	<input checked="" type="checkbox"/> Exceedances resolved within NSPS timeframe <input checked="" type="checkbox"/> Continuous compliance
(14)(B)	Subpart WWW Gas Collection and Control System	Wellhead LFG temperature, O ₂ or N ₂ ¹	Monthly (minimum)	Temp. < 131°F, N ₂ < 20% or O ₂ < 5%	<input checked="" type="checkbox"/> Exceedances resolved within NSPS timeframe <input checked="" type="checkbox"/> Continuous compliance
(14)(B)	Subpart WWW Gas Collection and Control System	Methane concentration above landfill surface ²	Quarterly (minimum)	[CH ₄] < 500 ppm	<input checked="" type="checkbox"/> Exceedances resolved within NSPS timeframe <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(1)	Thiopaq System	Thiopaq Installation and operation	N/A	Operate by June 1, 2015	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Thiopaq System	TRS concentration entering and exiting control equipment	Monthly	1,000 ppmv 12-month rolling average limit, 449 tpy 12-month rolling total	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Flare #4	LFG Flow to flare	Totalized monthly	No limits listed (scf)	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Thiopaq System	LFG flow entering and exiting TRS control equipment	Totalized monthly	No limits listed (scf)	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Thiopaq System	H ₂ S concentration entering and exiting TRS control equipment ²	Two times/day twice weekly, three days between minimum	No limits listed (ppmv)	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance

Condition ID	Emission Source / Control Device	Periodic Monitoring Parameter	Monitoring Frequency	Limit (From license)	Summary
(15)(B)(4)	Thiopaq System	Control equipment downtime	As occurs	95% uptime minimum 12-month rolling total	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Thiopaq System	Unscrubbed bypass	As occurs		<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Thiopaq System	Calibration of flow meters	Annually	Once per year minimum	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Landfill	NMOC concentration	As specified in 40 CFR 60.75(A)(3)	No limits listed (ppmv)	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Landfill	Propane fuel use	As occurs	No limits listed (gal)	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance
(15)(B)(4)	Flares #2 & #3	Hours of operation (each)	As occurs	100 hours per calendar year	<input checked="" type="checkbox"/> No deviations or exceedances <input checked="" type="checkbox"/> Continuous compliance

- Maine DEP has approved higher operating values (HOVs) at some gas collectors, such as 150 °F, 15 percent oxygen, or 5-inches of water pressure for collectors under geomembrane cover. During the second half of 2019, JRL maintained continuous compliance with the wellhead pressure, temperature, and oxygen requirements. Any exceedances of the NSPS Subpart WWW thresholds (zero-inches of water, 131 °F, 5 percent oxygen), or approved alternatives (5-inches of water, 150 °F, 15 percent oxygen), were corrected within the timeframe allowed by Subpart WWW (e.g., within 120 days). The parameter exceedances that were corrected during the reporting period are presented in Appendix A.
- During the second half of 2019, there were a total of three (3) locations with recorded methane surface concentration deviations from the 500 ppm standard. In each case, corrective actions taken by JRL reduced the methane surface concentration to less than 500 ppm before the followup surface scan readings, thereby maintaining continuous compliance with the surface scan requirements. Surface scan results are presented in Appendix B.

**Juniper Ridge Landfill
Semi-Annual Compliance Data Summary July 1 to December 31, 2019**

Month	Date TRS Sample Taken	TRS Samples Average of 3 samples Total Reduced Sulfur (ppm)		FLOW (scfm)	Rolling Average Exiting Control Equipment		Total landfill gas flow		Flares #2 & #3 Runtime hours	Control Equipment Downtime hours
		Inlet	Outlet		Outlet TRS (ppm)	Total SO2 (tons/yr)*	Bypass (scf)	Scrubbed (scf)		
July	07/11/19	13570	597	1206	692	50	771,175	65,564,272	0	9.6
August	08/12/19	12969	821	2138	696	52	761,856	88,159,769	0	8.0
September	09/11/19	14884	944	2294	706	56	407,722	89,557,233	0	4.0
October	10/03/19	17215	790	2030	714	60	2,113,690	71,666,132	0	21.9
November	11/06/19	14708	351	1225	694	60	1,927,143	58,930,039	0	23.4
December	12/11/19	17436	583	2319	707	63	350,843	95,194,821	0	3.0

*Includes bypass, reported as a rolling total as required by the license

Additional Conditions:	Limit
Records of inlet and outlet H2S concentrations are maintained onsite and available upon request	No limit listed
Records of control equipment downtime are maintained onsite and available upon request	No limit listed
Calibration logs of flow meters are maintained on site and available upon request	Once per year

Annual Compliance Certification

(a)	(b)/(c)	(d)	(e1)	(e2)
Condition ID (and emission source name if appropriate)	Compliance Status (Check appropriate box)	Method for determining compliance (Check appropriate box)	Summary of deviations from the condition (e.g. % of operating time or number of deviations.)	Describe deviations in detail or reference certified report submitted to DEP. (Attach additional pages if needed)
(#1) Allow Access to Site For Authorized Personnel	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Access to site allowed for authorized DEP personnel as required				
(#2) New/Amended License Prior to Construction or Modification	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#3) Establish BMP For Fugitive PM	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#4) Annual License Fee	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#5) Maintain and Operate All Emission Units	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
Best management practices being utilized to minimize emissions from landfill & flare				
(#6) Records Retention For Six Years	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#7) Comply With All Terms & Conditions of License	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
All applicable terms and conditions of the license are being complied with				
(#8A) Perform Stack Testing Within 60 Days of Notification	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
MEDEP did not request stack testing for flare				
(#8B) Install Test Ports to Allow Emission Testing	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Emissions testing not requested				
(#8C) Submit a Written Report to the Department	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE

Annual Compliance Certification

(a)	(b)(c)	(d)	(e1)	(e2)
Condition ID (and emission source name if appropriate)	Compliance Status (Check appropriate box)	Method for determining compliance (Check appropriate box)	Summary of deviations from the condition (e.g. % of operating time or number of deviations.)	Describe deviations in detail or reference certified report submitted to DEP. (Attach additional pages if needed)
(#9 A-C) Emissions in Excess of Applicable Standards	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#10 A-C) Maintain Records of Deviations From License	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#11) Determination of Licensee's Compliance Status	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#12) Submission of Semiannual Reports of Monitoring	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
Semiannual report accompanies this submission				
(#13 A-E) Submission of Annual Compliance Certification	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
Annual compliance certification accompanies this submission				
(#14A) Subject to 40 CFR Part 60 Subparts A and WWWW	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Design capacity >2.5 million cubic meters, NMOC emissions >50 megagrams/year. An NSPS-compliant GCCS plan was submitted by June 8, 2013 and NSPS-compliant operation and monitoring began by December 8, 2014. NSPS reporting of GCCS operation began in 2015.				
(#14B) Operate and Maintain a GCCS	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Maine DEP has approved higher operating values (HOVs) at some gas collectors, such as 150 oF, 15 percent oxygen, or 5-inches of water pressure for collectors under geomembrane cover. During 2019, JRL maintained continuous compliance with the wellhead pressure, temperature, and oxygen requirements. Any exceedances of the NSPS Subpart WWWW thresholds (zero-inches of water, 131 oF, 5 percent oxygen), or approved alternatives (5-inches of water, 150 oF, 15 percent oxygen), were corrected within the timeframe allowed by Subpart WWWW (e.g., within 120 days). The parameter exceedances that were corrected during the reporting period are presented in Appendix A.				
(#14C) Readily Accessible On-Site Records	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#14D) Good Operating Practices	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Best management practices being utilized to minimize formation and release of TRS laden landfill gases				

Note: The facility reporter must take into account any credible evidence for non-compliance.

Annual Compliance Certification

(a)	(b)/(c)	(d)	(e1)	(e2)
Condition ID (and emission source name if appropriate)	Compliance Status (Check appropriate box)	Method for determining compliance (Check appropriate box)	Summary of deviations from the condition (e.g. % of operating time or number of deviations.)	Describe deviations in detail or reference certified report submitted to DEP. (Attach additional pages if needed)
(#14E) Backup Flare Operation	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#14F) Elevation of Flare #4	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Flare installed at 265 feet above sea level at established location				
(#14G) Short Term Flare Emission Limits and Visible Emissions	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Visual monitoring				
(#14H) Annual Flare Emission Limits for SO ₂ , VOC, HAP	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#15A) Pre June 1, 2015 Short Term and Annual Hydrogen Sulfide (H ₂ S) Limits	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#15B-1) Operation of Thiopaq® System	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Thiopaq commenced operation January 2015				
(#15B-2-4) Post June 1, 2015 Short Term and Annual Hydrogen Sulfide (H ₂ S) Limits	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#15C) Control Equipment Uptime	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#16) Visible Fugitive Emissions	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Visual monitoring.				
(#17) Visible General Process Sources Emissions	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input type="checkbox"/> Recordkeeping <input checked="" type="checkbox"/> Other (specify method)	NONE	NONE
Visual monitoring.				

Annual Compliance Certification

(a)	(b)/(c)	(d)	(e1)	(e2)
Condition ID (and emission source name if appropriate)	Compliance Status (Check appropriate box)	Method for determining compliance (Check appropriate box)	Summary of deviations from the condition (e.g. % of operating time or number of deviations.)	Describe deviations in detail or reference certified report submitted to DEP. (Attach additional pages if needed)
(#18) Semiannual Reporting	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#19) Annual Compliance Certification	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#20) Annual Emission Statement	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method) The MAIRIS Report is submitted annually.	NONE	NONE
(#21) Applicable State Regulations	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#22) Ozone Depleting Substances	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#23) Asbestos Abatement	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#24) Renewal Application Due by 7-Apr-19	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method)	NONE	NONE
(#25) The Previous NSR Requirements Are Still Applicable	<input checked="" type="checkbox"/> Continuous Compliance <input type="checkbox"/> Intermittent Compliance	<input type="checkbox"/> CEMS/COMS <input type="checkbox"/> Parameter Monitor <input type="checkbox"/> Stack Test <input checked="" type="checkbox"/> Recordkeeping <input type="checkbox"/> Other (specify method) Those requirements are summarized in the Part 70 License.	NONE	NONE

Note: The facility reporter must take into account any credible evidence for non-compliance.

**SEMIANNUAL PERIODIC MONITORING REPORT
LANDFILL GAS COLLECTION AND CONTROL SYSTEM**

For Period from July 1 through December 31, 2019

*Juniper Ridge Landfill
Old Town, Maine*

January 2020



Jeffrey Pelletier
Environmental Manager
NEWSME Landfill Operations, LLC
358 Emerson Mill Road
Hampden, Maine 04444

January 30, 2020
File No. 2343.20

Re: NSPS Semiannual Periodic Monitoring Report
Gas Collection and Control System
Juniper Ridge Landfill
Old Town, Maine

Dear Jeff:

On behalf of NEWSME Landfill Operations, LLC (NEWSME), Sanborn, Head & Associates, Inc. (Sanborn Head) prepared the enclosed semiannual periodic monitoring report for the gas collection and control system (GCCS) at the Juniper Ridge Landfill (JRL) in Old Town, Maine as required by Subpart WWW of the New Source Performance Standards (NSPS) and Subpart AAAA of the National Emission Standards for Hazardous Air Pollutants (NESHAP).

Please contact us with any questions.

Sincerely,
SANBORN, HEAD & ASSOCIATES, INC.

A handwritten signature in cursive script that reads "Jeff Doris".

Jeffrey J. Doris
Project Manager

A handwritten signature in cursive script that reads "David E. Adams".

David E. Adams, P.E.
Senior Vice President/Principal

DJE/JJD/DEA: dje

Encl. Semiannual Periodic Monitoring Report

cc: Toni King, NEWSME (electronic copy)

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FIGURES

Figure 1 Landfill Gas Collection and Control System Plan

APPENDICES

Appendix A	Gas Extraction Point NSPS Exceedances
Appendix B	Landfill Surface Monitoring
Appendix C	Control System Summary
Appendix D	Actions Taken to Improve the Quality and Quantity of Gas Collected

1.0 INTRODUCTION

On behalf of NEWSME Landfill Operations, LLC (NEWSME), Sanborn, Head & Associates, Inc. (Sanborn Head) prepared this semiannual periodic monitoring report (semiannual report) for the gas collection and control system (GCCS) at the Juniper Ridge Landfill (JRL) in Old Town, Maine. We prepared this report to satisfy the requirements from 40 Code of Federal Regulations (CFR) Part 60 Subpart WWW (the New Source Performance Standards [NSPS] for Municipal Solid Waste [MSW] landfills) and 40 CFR Part 63 Subpart AAAA (the National Emission Standard for Hazardous Air Pollutants [NESHAP] for MSW landfills).

This NSPS semiannual report covers the period from July 1, 2019 through December 31, 2019.

2.0 SITE DESCRIPTION

The State of Maine owns JRL, and NEWSME operates JRL, which is located on the western side of Interstate 95 in Old Town, Maine, and is accessible from State Route 16 in Alton, Maine. Under the current license, JRL accepts approximately 2,200 tons per day of construction and demolition debris; residues (ash, front-end process residue [FEPR], and over-sized bulky wastes); MSW; water and wastewater treatment plant sludge; and lesser amounts of miscellaneous non-hazardous wastes.

JRL is located on a 780-acre parcel of land, and the licensed footprint of the landfill is approximately 122 acres. Active filling began in Cell 1 at the site in December 1996, and current landfill operations are in Cells 10 and 11 and other adjacent cells on top of the landfill. Intermediate and intermediate-final cover has been placed in Cells 1 through 9. The licensed capacity of JRL is approximately 19.63 million cubic yards (15.01 million m³). With a waste compaction density of approximately 0.86 tons of waste per cubic yard, the estimated capacity on a mass basis is approximately 16.9 million tons (15.3 million Mg).

The JRL GCCS, shown in Figure 1, is designed for active collection of landfill gas (LFG) while maintaining anaerobic conditions within the landfill by limiting air intrusion into the waste. The GCCS is monitored using equipment that measures and records the LFG extraction in standard cubic feet per minute (scfm) and the concentration in LFG of methane, oxygen, carbon dioxide, and balance gas (primarily nitrogen) in percent by volume.

The GCCS is regularly expanded by adding gas extraction points and related infrastructure. LFG is managed in Cells 1 through 11 using nearly horizontal sloped gas collection trenches (GCTs) and/or vertical gas extraction wells. GCTs are temporary collectors installed to collect LFG until vertical wells are installed. Vertical wells are installed as needed, including on the outer slopes of the cells as they are filled to final grades. The vacuum applied at each extraction location is adjusted as needed with a manually controlled valve on the extraction location wellhead. The active system contains approximately 111 vertical wells and 75 gas collection trenches installed throughout Cells 1 through 11. LFG is also collected from eight other connections to the leachate and/or condensate collection systems and to additional horizontal collectors to control odors.

The NSPS does not require gas collection in areas where the waste has been in place less than five years, or less than two years for areas that have reached final grade or been closed. Although not required by its air license or NSPS Subpart WWW, JRL maintains gas collectors and connections to the leachate system in recently placed waste, and uses them as needed to control odors and minimize greenhouse gas emissions. Although these connections are monitored when in use, readings of non-negative pressure, or oxygen greater than five percent, are not classified as NSPS exceedances of the monitoring standards.

LFG extraction points are connected to common header pipes that convey the gas to a 106.5 million British thermal units per hour (MMBtu/hr) open flare (Flare No. 4), which the Maine Department of Environmental Protection (Maine DEP) approved in November 2008. Open Flares No. 2 and No. 3 are licensed as backup LFG control devices, and do not operate simultaneously with Flare No. 4.

Ahead of the July 1, 2015 license deadline, JRL began operating a Thiopaq® sulfur treatment system to remove total reduced sulfur (TRS) compounds from LFG prior to combustion to reduce emissions of sulfur dioxide (SO₂).

3.0 SEMIANNUAL REPORT REQUIREMENTS

The semiannual report is required by 40 CFR Part 60.757(f) and 40 CFR Part 63.1980 to contain:

- A description, including duration, of periods when the gas stream was diverted from the control devices through a bypass line;
- Periods in excess of five days when the gas collection system was not operating;
- Description and duration of periods when the control device was not operating for a period exceeding one hour, and therefore venting collected gas, and length of time the control device was not operating;
- A summary of the landfill surface monitoring results including the concentration and location where the 500-parts per million (ppm) methane surface monitoring threshold was exceeded;
- A summary of the landfill cover integrity check results including locations and descriptions of damage to the landfill cover;
- The date and location of each new gas collector added to the system;
- A summary of the gas collection system wellhead inspections and monitoring results, which identifies, by applicable extraction location, the value and duration for each NSPS exceedance of negative gauge pressure (not applicable for areas with geomembrane cover), a temperature of 55° C (131° F) (or approved alternative), and an oxygen content of five percent or a nitrogen content of 20 percent (or approved alternative); and
- A summary of the operating status of the flares including startup, shutdown, and malfunction (SSM) events.

4.0 GAS COLLECTION AND CONTROL SYSTEM

4.1 Landfill Gas Diverted from Control Devices

The LFG collection system was not constructed with a bypass line, and no LFG has been diverted from the control system through a bypass line from the combustion controls during the reporting period.

4.2 Landfill Gas Collection System Operation

Records of LFG flow rates delivered to the combustion devices during the reporting period indicate that there were no periods when the collection system was inoperable for a period of five consecutive days or more. As summarized in Appendix C, there were shorter periods when the gas collection system was down (i.e., the blower providing vacuum to the landfill).

The flare control system worked successfully during the reporting period, and there were no periods of an hour or more when the blower system was collecting gas and sending it through the flare un-combusted. When the flame goes out on the flare, the temperature monitoring system alerts the control system to turn off the blower system.

4.3 Gas Extraction Point Monitoring

The gas collection well field is monitored at least monthly to measure LFG concentrations and the temperature and pressure in the affected wellheads. In areas of the landfill where waste has been in place at least five years, or areas with final grade and waste in place at least two years, 40 CFR 60.755 requires JRL to report gas extraction points with NSPS exceedances of the pressure limit (negative gauge pressure, except for areas with geomembrane cover), oxygen concentration limit (five percent by volume, or approved alternative such as 15 percent by volume), or temperatures greater than 131° F (or approved alternative such as 150° F). Table A-1 in Appendix A presents the NSPS exceedances of the pressure, temperature, and oxygen standards that were recorded during the reporting period.

Oxygen concentration NSPS exceedances are due to poor quality LFG with low methane concentrations at certain extraction points. Adjusting the valves on wellheads, when possible, reduces the gas flow from the extraction points. At most extraction points where oxygen concentration NSPS exceedances occurred, LFG flow control valves were closed or adjusted to be "barely open." The intent of the NSPS oxygen threshold is to limit oxygen entrainment in the waste to limit the potential for a landfill fire. Reducing the flow at extraction points with elevated oxygen concentrations limits the potential for a fire. To the extent practicable, the flux of oxygen into the waste mass has been limited by balancing extraction points on a routine basis.

Maintaining negative gauge pressure at extraction locations can be achieved by increasing the applied vacuum (by opening LFG flow valves); taking this action, however, is not always advisable because these extraction points might have high oxygen concentrations. Extraction points that have non-negative pressure are monitored on a routine basis to balance pressure and elevated oxygen concerns.

Maintaining temperatures within acceptable levels provides a measure of safety relative to landfill fire concerns upon which the NSPS thresholds are based. Extraction points that exceed the temperature threshold are closely monitored and vacuum to these locations is reduced as necessary.

Operating at the default gas temperature (131° F, or 55° C) in Subpart WWW for MSW landfills has not been possible at all JRL wellheads on a consistent basis due to the type of waste disposed at JRL and the corresponding decomposition temperature. To allow for gas collection with waste decomposition temperatures greater than 131° F, JRL has obtained approval from Maine DEP to operate some gas extraction locations at an alternative operating temperature of 150° F.

JRL has also received approval from Maine DEP to operate some gas extraction locations at a higher operating value (HOV) of 15 percent oxygen, instead of the default of five percent. The HOV approvals for temperature and oxygen are included in Appendix A.

4.4 Landfill Surface Monitoring

Landfill surface monitoring scans were performed in general accordance with 40 CFR 60.755(c) and 40 CFR 60.756(f) to measure the concentration of methane near the surface of the landfill on September 15, 2019 (Q3-2019 scan) and on October 20, 2019 (Q2-2019 scan).

The NSPS surface monitoring protocol requires measuring methane surface concentrations within five to 10 centimeters (cm; [about 2 to 4 inches]) of the landfill surface while walking at a normal pace around the perimeter of the landfill and along a serpentine path traversing the landfill at 30-meter (m; approximately 100-foot) intervals.

The walking path for surface monitoring at the JRL is included on Figure B in Appendix B. In addition to monitoring along the path, NSPS requires surface monitoring in areas with:

- Visible cracks or holes in the landfill cover;
- Visible erosion or water on the landfill surface;
- Visually observed distressed vegetation; and
- Gas extraction components protruding through the landfill cover system (i.e., where the boots connect to the wells and the lateral collection system piping).

During surface monitoring, JRL personnel used a flame ionization detector (FID) that complies with the NSPS requirements and that was calibrated according to procedures outlined in U. S. Environmental Protection Agency (USEPA) Method 21.

There were three locations during the Q3-2019 initial scan, and zero locations during the Q4-2019 initial scan, with recorded NSPS exceedances of the methane surface concentration standard of 500 ppm. The NSPS exceedances were corrected before the required 10-day follow-up scans, and the return to compliance with the 500-ppm standard

was confirmed for each location during the one-month follow-up scans. Surface scan results are presented in Appendix B.

4.5 Landfill Cover Integrity

JRL uses geosynthetic membrane cover over large portions of the landfill to increase gas collection efficiency, and JRL performs cover repairs and upgrades over the entire landfill cover system as needed to increase gas collection and reduce odors. During the reporting period, JRL performed monthly cover integrity checks and made repairs as needed and as snow cover allowed.

4.6 Control Device Operation

The GCCS is monitored at the blower station where a Supervisory Control and Data Acquisition (SCADA) system monitors the LFG flow rate to the flares. The SCADA system records indicate there were no periods exceeding one hour when the gas collection system was operating while the flare system was not operating. During flare shutdowns, the system is designed for the blower to shut down also. The SSM events for the control system are recorded on SSM forms, and a summary of the SSM events is presented in Appendix C.

4.7 Landfill Gas Collection System Modifications

An updated Landfill Gas Collection and Control System Plan is provided as Figure 1. The figure shows additions to the gas collection system since the GCCS Design Report was submitted in June 2013. JRL installs gas collection trenches in some areas of the landfill as waste is placed, which allows gas collection to begin ahead of the schedule required by the NSPS. To increase LFG collection, and to reduce odors from LFG, these collectors might be used intermittently as needed at relatively low flow rates before gas generation allows negative pressure to be maintained with oxygen less than five percent.

JRL monitors gas collection points as they are added to the system, including those collectors in areas that cannot sustain continuous methane extraction. For the collectors installed in waste earlier than required, however, non-negative pressure or oxygen greater than five percent is not recorded as NSPS exceedances.

The applied vacuum is reduced at any collector with greater than five percent oxygen, and flow is maintained where methane is being collected by keeping the wellhead valves at least slightly open.

In addition to monitoring and adjusting gas collection points, JRL completes routine maintenance to improve the quality and quantity of LFG collected from the landfill and to improve monitoring of the LFG collection system. A summary of GCCS improvements completed during the reporting period is included as Table D-1 in Appendix D.

FIGURES

APPENDIX A

GAS EXTRACTION POINT NSPS EXCEEDANCES

**Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine**

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW22R	07-01-2019	Oxygen	Oxygen: 8.2	2			07-03-2019	closed
JR-GW-68	07-03-2019	Temperature	Initial Gas Temperature: 131.7	0			07-03-2019	closed
JR-GW-58	07-03-2019	Temperature	Initial Gas Temperature: 136.8	0			07-03-2019	closed
JR-GW--M	07-03-2019	Oxygen	Oxygen: 16.1	6	07-08-2019		07-09-2019	closed
JR-GW-70	07-03-2019	Temperature	Initial Gas Temperature: 135.6	28	07-08-2019	07-18-2019	07-31-2019	closed
JR-GW-66	07-03-2019	Temperature	Initial Gas Temperature: 134.1	0			07-03-2019	closed
JRGCT708	07-03-2019	Temperature	Initial Gas Temperature: 132	8	07-08-2019		07-11-2019	closed
JRGCT920	07-03-2019	Temperature	Initial Gas Temperature: 133.5	51	07-08-2019	07-18-2019	08-23-2019	closed
JR-GW-64	07-05-2019	Temperature	Initial Gas Temperature: 135.8	5			07-10-2019	closed
JR-GW-65	07-05-2019	Temperature	Initial Gas Temperature: 145.3	5			07-10-2019	closed
JR-GW-58	07-09-2019	Temperature	Initial Gas Temperature: 137.4	0			07-09-2019	closed
JR-GW-78	07-09-2019	Pressure	Initial Static Pressure: 0	0			07-09-2019	closed
JR-GW-69	07-11-2019	Oxygen	Oxygen: 5.4	1			07-12-2019	closed
JR-GW-69	07-16-2019	Oxygen	Oxygen: 8.7	7	07-21-2019		07-23-2019	closed
JR-GW--Y	07-16-2019	Temperature	Initial Gas Temperature: 133.6	1			07-17-2019	closed
JR-GW-58	07-17-2019	Temperature	Initial Gas Temperature: 136.9	6	07-22-2019		07-23-2019	closed
JR-GW--Z	07-17-2019	Temperature	Initial Gas Temperature: 131.2	0			07-17-2019	closed
JR-GW59R	07-23-2019	Temperature	Initial Gas Temperature: 132.3	0			07-23-2019	closed
JRGCT930	07-23-2019	Temperature	Initial Gas Temperature: 142.4	15	07-28-2019	08-07-2019	08-07-2019	closed
JRGCT928	07-23-2019	Temperature	Initial Gas Temperature: 132.5	15	07-28-2019	08-07-2019	08-07-2019	closed
JR-GW-39	07-23-2019	Oxygen	Oxygen: 5.5	0			07-23-2019	closed
JRGCT708	07-23-2019	Temperature	Initial Gas Temperature: 136.8	0			07-23-2019	closed
JRCT1012	07-23-2019	Temperature	Initial Gas Temperature: 141.4	8	07-28-2019		07-31-2019	closed
JRGCT3A1	07-24-2019	Oxygen	Oxygen: 11.7	16	07-29-2019	08-08-2019	08-09-2019	closed
JRGCT511	07-24-2019	Temperature	Initial Gas Temperature: 150.2	0			07-24-2019	closed
JR-GW-94	07-24-2019	Oxygen	Oxygen: 14.3	17	07-29-2019	08-08-2019	08-10-2019	closed
JR-GW-69	07-24-2019	Oxygen	Oxygen: 9.6	0			07-24-2019	closed
JR-GW-60	07-31-2019	Temperature	Initial Gas Temperature: 141.4	0			07-31-2019	closed
JR-GW-51	07-31-2019	Temperature	Initial Gas Temperature: 141.8	0			07-31-2019	closed
JR-GW-51	07-31-2019	Pressure	Initial Static Pressure: 0.07	0			07-31-2019	closed
JR-GW-70	07-31-2019	Temperature	Initial Gas Temperature: 138	0			07-31-2019	closed
JR-GW-68	08-02-2019	Temperature	Initial Gas Temperature: 134.9	0			08-02-2019	closed
JR-GW-41	08-02-2019	Pressure	Initial Static Pressure: 0	19	08-07-2019	08-17-2019	08-21-2019	closed
JR-GW-60	08-02-2019	Temperature	Initial Gas Temperature: 142.2	35	08-07-2019	08-17-2019	09-06-2019	closed
JR-GW-51	08-02-2019	Temperature	Initial Gas Temperature: 140.4	35	08-07-2019	08-17-2019	09-06-2019	closed
JR-GW-51	08-02-2019	Pressure	Initial Static Pressure: 0.04	20	08-07-2019	08-17-2019	08-22-2019	closed
JR-GW-42	08-02-2019	Temperature	Initial Gas Temperature: 132.9	0			08-02-2019	closed
JR-GW22R	08-02-2019	Oxygen	Oxygen: 8.9	5			08-07-2019	closed
JR-GW--V	08-02-2019	Temperature	Initial Gas Temperature: 131.7	20	08-07-2019	08-17-2019	08-22-2019	closed

**Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine**

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW--X	08-02-2019	Temperature	Initial Gas Temperature: 134.1	5			08-07-2019	closed
JR-GW--Y	08-02-2019	Oxygen	Oxygen: 5.9	70	08-07-2019	08-17-2019	10-11-2019	closed
JR-GW-88	08-06-2019	Pressure	Initial Static Pressure: 0.02	3			08-09-2019	closed
JR-GW76B	08-06-2019	Temperature	Initial Gas Temperature: 133.4	1			08-07-2019	closed
JR-GW77R	08-06-2019	Pressure	Initial Static Pressure: 0.04	3			08-09-2019	closed
JR-GW86B	08-06-2019	Pressure	Initial Static Pressure: 0.09	6	08-11-2019		08-12-2019	closed
JR-GW78B	08-06-2019	Pressure	Initial Static Pressure: 0.06	1			08-07-2019	closed
JR-GW--M	08-07-2019	Oxygen	Oxygen: 15.8	15	08-12-2019	08-22-2019	08-22-2019	closed
JR-GW-69	08-07-2019	Temperature	Initial Gas Temperature: 131.2	0			08-07-2019	closed
JR-GW-70	08-07-2019	Temperature	Initial Gas Temperature: 137.5	37	08-12-2019	08-22-2019	09-13-2019	closed
JRGCT930	08-07-2019	Pressure	Initial Static Pressure: 0.06	15	08-12-2019	08-22-2019	08-22-2019	closed
JRGCT929	08-07-2019	Temperature	Initial Gas Temperature: 132.5	0			08-07-2019	closed
JRGCT927	08-07-2019	Pressure	Initial Static Pressure: 0.02	0			08-07-2019	closed
JR-GW-39	08-07-2019	Oxygen	Oxygen: 5	0			08-07-2019	closed
JRCT1011	08-09-2019	Temperature	Initial Gas Temperature: 145.4	15	08-14-2019		08-24-2019	closed
JRCT1012	08-09-2019	Temperature	Initial Gas Temperature: 139.1	20	08-14-2019	08-24-2019	08-29-2019	closed
JR-GW76B	08-09-2019	Temperature	Initial Gas Temperature: 135.1	12	08-14-2019		08-21-2019	closed
JR-GW79B	08-10-2019	Temperature	Initial Gas Temperature: 133.4	2			08-12-2019	closed
JR-GW-59	08-12-2019	Oxygen	Oxygen: 13.1	0			08-12-2019	closed
JR-GW-69	08-12-2019	Oxygen	Oxygen: 7.3	3			08-15-2019	closed
JR-GW77R	08-12-2019	Temperature	Initial Gas Temperature: 132	7	08-17-2019		08-19-2019	closed
JR-GW78C	08-12-2019	Pressure	Initial Static Pressure: 0.09	7	08-17-2019		08-19-2019	closed
JR-GW69B	08-12-2019	Pressure	Initial Static Pressure: 0	3			08-15-2019	closed
JR-GW-69	08-15-2019	Temperature	Initial Gas Temperature: 132.2	0			08-15-2019	closed
JR-GW79B	08-15-2019	Temperature	Initial Gas Temperature: 135	4			08-19-2019	closed
JR-GW86B	08-15-2019	Pressure	Initial Static Pressure: 0.09	4			08-19-2019	closed
JR-GW-68	08-15-2019	Temperature	Initial Gas Temperature: 137.7	4			08-19-2019	closed
JR-GW59R	08-15-2019	Temperature	Initial Gas Temperature: 137.1	4			08-19-2019	closed
JR-GW-59	08-15-2019	Oxygen	Oxygen: 5.9	6	08-20-2019		08-21-2019	closed
JR-GW104	08-15-2019	Temperature	Initial Gas Temperature: 132.2	0			08-15-2019	closed
JR-GW59R	08-19-2019	Temperature	Initial Gas Temperature: 137.6	2			08-21-2019	closed
JR-GW-58	08-21-2019	Temperature	Initial Gas Temperature: 136.6	0			08-21-2019	closed
JR-GW-68	08-22-2019	Temperature	Initial Gas Temperature: 140.7	0			08-22-2019	closed
JR-GW59R	08-22-2019	Temperature	Initial Gas Temperature: 137.4	0			08-22-2019	closed
JR-GW-58	08-22-2019	Temperature	Initial Gas Temperature: 136	0			08-22-2019	closed
JR-GW42B	08-22-2019	Pressure	Initial Static Pressure: 0.19	10	08-27-2019		09-01-2019	closed
JR-GW--X	08-22-2019	Temperature	Initial Gas Temperature: 132.8	10	08-27-2019		09-01-2019	closed
JR-GW78C	08-22-2019	Pressure	Initial Static Pressure: 0.01	10	08-27-2019		09-01-2019	closed
JR-GW-85	08-22-2019	Temperature	Initial Gas Temperature: 132.8	14	08-27-2019		09-05-2019	closed

**Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine**

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW-86	08-22-2019	Temperature	Initial Gas Temperature: 136.4	14	08-27-2019		09-05-2019	closed
JR-GW79B	08-22-2019	Temperature	Initial Gas Temperature: 131.4	7	08-27-2019		08-29-2019	closed
JR-GW-39	08-22-2019	Oxygen	Oxygen: 7.3	0			08-22-2019	closed
JR-GW-56	08-23-2019	Temperature	Initial Gas Temperature: 135.5	14	08-28-2019		09-06-2019	closed
JRGCT708	08-23-2019	Temperature	Initial Gas Temperature: 133.5	6	08-28-2019		08-29-2019	closed
JRGCT3A1	08-23-2019	Oxygen	Oxygen: 5	14	08-28-2019		09-06-2019	closed
JR-GW-55	08-26-2019	Temperature	Initial Gas Temperature: 137.7	3			08-29-2019	closed
JR-GW-65	08-26-2019	Temperature	Initial Gas Temperature: 134.9	3			08-29-2019	closed
JRGCT508	08-26-2019	Temperature	Initial Gas Temperature: 150.4	0			08-26-2019	closed
JRGCT503	08-26-2019	Oxygen	Oxygen: 5.4	11	08-31-2019		09-06-2019	closed
JR-GW76B	08-29-2019	Temperature	Initial Gas Temperature: 141.2	18	09-03-2019	09-13-2019	09-16-2019	closed
JR-GW-68	08-29-2019	Oxygen	Oxygen: 6.7	0			08-29-2019	closed
JR-GW-68	08-29-2019	Temperature	Initial Gas Temperature: 136.8	0			08-29-2019	closed
JR-GW59R	08-29-2019	Temperature	Initial Gas Temperature: 131.4	0			08-29-2019	closed
JR-GW-69	08-29-2019	Oxygen	Oxygen: 6.8	3			09-01-2019	closed
JR-GW-68	08-29-2019	Temperature	Initial Gas Temperature: 131.4	0			08-29-2019	closed
JR-GW-68	09-01-2019	Temperature	Initial Gas Temperature: 131.3	0			09-01-2019	closed
JR-GW-58	09-01-2019	Temperature	Initial Gas Temperature: 135.1	0			09-01-2019	closed
JR-GW22R	09-01-2019	Oxygen	Oxygen: 10	0			09-01-2019	closed
JRGCT712	09-01-2019	Oxygen	Oxygen: 8.4	15	09-06-2019		09-16-2019	closed
JR-GW78C	09-01-2019	Temperature	Initial Gas Temperature: 133.6	15	09-06-2019		09-16-2019	closed
JR-GW-69	09-01-2019	Oxygen	Oxygen: 11.9	15	09-06-2019		09-16-2019	closed
JR-GW86B	09-05-2019	Pressure	Initial Static Pressure: 0.03	11	09-10-2019		09-16-2019	closed
JR-GW-87	09-05-2019	Pressure	Initial Static Pressure: 0.03	0			09-05-2019	closed
JR-GW79B	09-05-2019	Temperature	Initial Gas Temperature: 136.2	11	09-10-2019		09-16-2019	closed
JR-GW-39	09-05-2019	Oxygen	Oxygen: 11.3	0			09-05-2019	closed
JR-GW-85	09-06-2019	Temperature	Initial Gas Temperature: 134.8	0			09-06-2019	closed
JR-GW-86	09-06-2019	Temperature	Initial Gas Temperature: 133.8	0			09-06-2019	closed
JR-GW-60	09-06-2019	Pressure	Initial Static Pressure: 0.01	10	09-11-2019		09-16-2019	closed
JR-GW-66	09-08-2019	Temperature	Initial Gas Temperature: 137.4	0			09-08-2019	closed
JR-GW-18	09-08-2019	Oxygen	Oxygen: 5.3	8	09-13-2019		09-16-2019	closed
JRGCT919	09-08-2019	Pressure	Initial Static Pressure: 0.06	8	09-13-2019		09-16-2019	closed
JRGCT920	09-08-2019	Temperature	Initial Gas Temperature: 131.3	0			09-08-2019	closed
JRCT1011	09-08-2019	Temperature	Initial Gas Temperature: 141	12	09-13-2019		09-20-2019	closed
JRCT1011	09-08-2019	Pressure	Initial Static Pressure: 0.02	0			09-08-2019	closed
JRCT1012	09-08-2019	Temperature	Initial Gas Temperature: 132.7	8	09-13-2019		09-16-2019	closed
JR-GW-88	09-08-2019	Pressure	Initial Static Pressure: 0.1	8	09-13-2019		09-16-2019	closed
JRGCT3A1	09-11-2019	Oxygen	Oxygen: 9	5	09-16-2019		09-16-2019	closed
JR-GW-64	09-11-2019	Temperature	Initial Gas Temperature: 131.4	0			09-11-2019	closed

**Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine**

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW-65	09-11-2019	Temperature	Initial Gas Temperature: 134.6	5	09-16-2019		09-16-2019	closed
JR-GW-60	09-16-2019	Temperature	Initial Gas Temperature: 138.2	0			09-16-2019	closed
JR-GW-69	09-29-2019	Oxygen	Oxygen: 7	8	10-04-2019		10-07-2019	closed
JR-GW-68	09-29-2019	Temperature	Initial Gas Temperature: 135	0			09-29-2019	closed
JR-GW59R	09-29-2019	Temperature	Initial Gas Temperature: 137.2	0			09-29-2019	closed
JR-GW-68	10-07-2019	Temperature	Initial Gas Temperature: 139.1	0			10-07-2019	closed
JR-GW59R	10-07-2019	Temperature	Initial Gas Temperature: 137.1	0			10-07-2019	closed
JR-GW-60	10-07-2019	Temperature	Initial Gas Temperature: 141	14	10-12-2019		10-21-2019	closed
JR-GW-51	10-07-2019	Temperature	Initial Gas Temperature: 138.9	0			10-07-2019	closed
JR-GW76B	10-07-2019	Temperature	Initial Gas Temperature: 139.6	0			10-07-2019	closed
JR-GW77R	10-07-2019	Temperature	Initial Gas Temperature: 131.1	0			10-07-2019	closed
JR-GW78B	10-07-2019	Pressure	Initial Static Pressure: 0.01	3			10-10-2019	closed
JR-GW86B	10-07-2019	Pressure	Initial Static Pressure: 0.23	3			10-10-2019	closed
JR-GW-86	10-07-2019	Temperature	Initial Gas Temperature: 134.1	0			10-07-2019	closed
JR-GW79B	10-07-2019	Temperature	Initial Gas Temperature: 131.8	0			10-07-2019	closed
JR-GW-70	10-07-2019	Temperature	Initial Gas Temperature: 134.4	0			10-07-2019	closed
JR-GW77R	10-10-2019	Temperature	Initial Gas Temperature: 131	0			10-10-2019	closed
JR-GW-68	10-11-2019	Temperature	Initial Gas Temperature: 134.4	0			10-11-2019	closed
JR-GW59R	10-11-2019	Temperature	Initial Gas Temperature: 136.8	0			10-11-2019	closed
JR-GW-49	10-11-2019	Pressure	Initial Static Pressure: 0.03	0			10-11-2019	closed
JR-GW50B	10-11-2019	Pressure	Initial Static Pressure: 0.19	0			10-11-2019	closed
JR-GW42B	10-11-2019	Pressure	Initial Static Pressure: 0.09	15	10-16-2019		10-26-2019	closed
JR-GW51B	10-11-2019	Pressure	Initial Static Pressure: 0.11	15	10-16-2019		10-26-2019	closed
JR-GW-68	10-11-2019	Temperature	Initial Gas Temperature: 136.1	15	10-16-2019		10-26-2019	closed
JR-GW77R	10-11-2019	Temperature	Initial Gas Temperature: 132	1			10-12-2019	closed
JR-GW50R	10-12-2019	Pressure	Initial Static Pressure: 0.01	0			10-12-2019	closed
JR-GW59R	10-12-2019	Temperature	Initial Gas Temperature: 137.1	0			10-12-2019	closed
JRGCT927	10-12-2019	Pressure	Initial Static Pressure: 0.03	14	10-17-2019		10-26-2019	closed
JR-GW-56	10-12-2019	Temperature	Initial Gas Temperature: 132.2	0			10-12-2019	closed
JRGCT920	10-12-2019	Temperature	Initial Gas Temperature: 133.5	14	10-17-2019		10-26-2019	closed
JRCT1011	10-12-2019	Temperature	Initial Gas Temperature: 141	14	10-17-2019		10-26-2019	closed
JRGCT3B2	10-15-2019	Pressure	Initial Static Pressure: 0.09	0			10-15-2019	closed
JRGCT3B1	10-15-2019	Pressure	Initial Static Pressure: 0.01	0			10-15-2019	closed
JRGCT603	10-16-2019	Oxygen	Oxygen: 12.8	35	10-21-2019	10-31-2019	11-20-2019	closed
JRGCT604	10-16-2019	Oxygen	Oxygen: 6.3	10	10-21-2019		10-26-2019	closed
JR-GW59R	11-02-2019	Temperature	Initial Gas Temperature: 137.9	0			11-02-2019	closed
JR-GW-58	11-02-2019	Temperature	Initial Gas Temperature: 135	0			11-02-2019	closed
JR-GW-60	11-09-2019	Temperature	Initial Gas Temperature: 139	6	11-14-2019		11-15-2019	closed
JR-GW-60	11-09-2019	Pressure	Initial Static Pressure: 0.02	6	11-14-2019		11-15-2019	closed

**Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine**

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW-51	11-09-2019	Pressure	Initial Static Pressure: 0.11	18	11-14-2019	11-24-2019	11-27-2019	closed
JR-GW--M	11-09-2019	Oxygen	Oxygen: 20.2	18	11-14-2019	11-24-2019	11-27-2019	closed
JR-OP901	11-09-2019	Oxygen	Oxygen: 7.7	12	11-14-2019		11-21-2019	closed
JR-GW78B	11-09-2019	Pressure	Initial Static Pressure: 0.02	0			11-09-2019	closed
JR-GW69B	11-09-2019	Pressure	Initial Static Pressure: 0.03	6	11-14-2019		11-15-2019	closed
JR-GW-70	11-15-2019	Temperature	Initial Gas Temperature: 135.5	0			11-15-2019	closed
JR-GW23R	11-15-2019	Pressure	Initial Static Pressure: 0.14	12	11-20-2019		11-27-2019	closed
JRGCT829	11-17-2019	Temperature	Initial Gas Temperature: 133	0			11-17-2019	closed
JR-GW-18	11-17-2019	Oxygen	Oxygen: 5.8	0			11-17-2019	closed
JR-GW-25	11-17-2019	Oxygen	Oxygen: 5.5	0			11-17-2019	closed
JR-GW-88	11-18-2019	Pressure	Initial Static Pressure: 0.32	3			11-21-2019	closed
JRGT1011	11-18-2019	Pressure	Initial Static Pressure: 0.11	3			11-21-2019	closed
JR-GW-87	11-18-2019	Pressure	Initial Static Pressure: 0.04	0			11-18-2019	closed
JR-GW-41	11-20-2019	Pressure	Initial Static Pressure: 0.07	0			11-20-2019	closed
JRGT1002	11-21-2019	Pressure	Initial Static Pressure: 0.02	0			11-21-2019	closed
JR-GW86B	11-21-2019	Pressure	Initial Static Pressure: 0.11	6	11-26-2019		11-27-2019	closed
JR-GW-86	11-22-2019	Pressure	Initial Static Pressure: 0	0			11-22-2019	closed
JR-GW60B	11-22-2019	Pressure	Initial Static Pressure: 0.01	5	11-27-2019		11-27-2019	closed
JR-GW-60	11-22-2019	Temperature	Initial Gas Temperature: 133.5	5	11-27-2019		11-27-2019	closed
JRGCT919	11-22-2019	Pressure	Initial Static Pressure: 0.01	0			11-22-2019	closed
JR-GW-60	11-22-2019	Pressure	Initial Static Pressure: 0.01	0			11-22-2019	closed
JRGCT704	11-22-2019	Pressure	Initial Static Pressure: 0.3	5	11-27-2019		11-27-2019	closed
JRGCT3A1	11-23-2019	Oxygen	Oxygen: 18.6	13	11-28-2019		12-06-2019	closed
JR-GW-85	11-27-2019	Temperature	Initial Gas Temperature: 133.1	0			11-27-2019	closed
JR-GW-51	11-27-2019	Temperature	Initial Gas Temperature: 141.7	0			11-27-2019	closed
JR-GW22R	11-27-2019	Oxygen	Oxygen: 9.5	0			11-27-2019	closed
JR-GW-60	12-04-2019	Temperature	Initial Gas Temperature: 142.7	19	12-09-2019	12-19-2019	12-23-2019	closed
JR-GW-60	12-04-2019	Pressure	Initial Static Pressure: 0.02	15	12-09-2019	12-19-2019	12-19-2019	closed
JR-GW69B	12-04-2019	Pressure	Initial Static Pressure: 0.09	19	12-09-2019	12-19-2019	12-23-2019	closed
JR-GW-70	12-04-2019	Temperature	Initial Gas Temperature: 136.2	19	12-09-2019	12-19-2019	12-23-2019	closed
JRGCT707	12-08-2019	Oxygen	Oxygen: 9.2	39	12-13-2019	12-23-2019		open ¹
JR-GW23R	12-11-2019	Pressure	Initial Static Pressure: 0.04	12	12-16-2019		12-23-2019	closed
JRGCT3A1	12-11-2019	Oxygen	Oxygen: 14	0			12-11-2019	closed
JR-GW59R	12-19-2019	Temperature	Initial Gas Temperature: 134.8	4			12-23-2019	closed
JR-GW-69	12-19-2019	Oxygen	Oxygen: 21.6	15	12-24-2019	01-03-2020	01-03-2020	closed
JR-GW-68	12-19-2019	Oxygen	Oxygen: 6.8	4			12-23-2019	closed
JR-GW-59	12-19-2019	Oxygen	Oxygen: 18	15	12-24-2019	01-03-2020	01-03-2020	closed
JR-GW50R	12-19-2019	Oxygen	Oxygen: 20	4			12-23-2019	closed

Table A-1
Gas Extraction Point NSPS Exceedances
Wellfield Monitoring from July 1 through December 31, 2019
Juniper Ridge Landfill
Old Town, Maine

Device Name	Open Date	NSPS Exceedances			Re-Check Deadline			Status
		Type		Duration (days)	5-Day	15-Day	Resolved Date	
JR-GW51B	12-19-2019	Pressure	Initial Static Pressure: 0.05	4			12-23-2019	closed
JR-GW60B	12-19-2019	Pressure	Initial Static Pressure: 0.08	4			12-23-2019	closed
JR-GW--L	12-19-2019	Oxygen	Oxygen: 10.6	4			12-23-2019	closed
JR-GW-51	12-19-2019	Pressure	Initial Static Pressure: 0.28	28	12-24-2019	01-03-2020	01-10-2020	closed
JR-GW22R	12-19-2019	Oxygen	Oxygen: 17.9	15	12-24-2019		01-03-2020	closed
JR-GW31R	12-19-2019	Oxygen	Oxygen: 7.1	0			12-19-2019	closed
JR-GW--U	12-19-2019	Oxygen	Oxygen: 22	4			12-23-2019	closed
JRGCT834	12-19-2019	Oxygen	Oxygen: 7.3	0			12-19-2019	closed
JR-GW78C	12-19-2019	Oxygen	Oxygen: 14.4	4			12-23-2019	closed
JR-GW-78	12-22-2019	Temperature	Initial Gas Temperature: 133.5	0			12-22-2019	closed
JR-GW-78	12-22-2019	Pressure	Initial Static Pressure: 0.03	1			12-23-2019	closed
JR-GW86B	12-22-2019	Pressure	Initial Static Pressure: 0.08	1			12-23-2019	closed
JR-GW-86	12-22-2019	Temperature	Initial Gas Temperature: 131.8	0			12-22-2019	closed
JRCT1012	12-22-2019	Temperature	Initial Gas Temperature: 136.5	0			12-22-2019	closed
JRCT1011	12-23-2019	Temperature	Initial Gas Temperature: 141.2	11	12-28-2019		01-03-2020	closed
JR-GW-60	12-23-2019	Pressure	Initial Static Pressure: 0.1	11	12-28-2019		01-03-2020	closed
JR-GW50R	12-23-2019	Pressure	Initial Static Pressure: 0.05	0			12-23-2019	closed
JR-GW69B	12-26-2019	Pressure	Initial Static Pressure: 0.04	0			12-26-2019	closed

Notes:

1. For JRGCT-707, the site assumes this collector is plugged or watered out. A low-flow wellhead was installed on the collector on January 3, 2020. The site will continue to monitor the collector through January, but discontinuing the well might be the resolution. The other oxygen exceedances that occurred during December were resolved.



JANET T. MILLS
GOVERNOR

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



GERALD D. REID
COMMISSIONER

December 4, 2019

Jeffrey Pelletier
NEWSME Landfill Operations, LLC
358 Emerson Mill Rd
Hampden, ME 04444

RE: Update to Gas Collectors with Higher Operating Values (HOVs)

Dear Mr. Pelletier,

This letter is in response to a letter dated November 14, 2019, submitted on behalf of NEWSME Landfill Operations, LLC (NEWSME) by Sanborn Head and Associates, Inc. regarding the Juniper Ridge Landfill (JRL) operated by NEWSME and located in Old Town, Maine. This letter addressed the release/relinquishment of some higher operating values (HOVs) for numerous individually listed gas collection wells throughout the facility.

JRL commenced construction on an expansion on May 7, 2018, and is therefore subject to *Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014*, 40 C.F.R. Part 60, Subpart XXX. As a landfill with a design capacity greater than 2.5 million cubic meters and a non-methane organic compound (NMOC) emission rate greater than 34 megagrams per year, NEWSME is required to install and operate a collection and control system at JRL per the requirements of Subpart XXX no later than January 31, 2021.

Until that time, JRL operates a collection and control system per the requirements of *Standards of Performance for Municipal Solid Waste Landfills*, 40 C.F.R. Part 60, Subpart WWW. The collection and control system is subject to the operational standards listed in § 60.753, including the following:

Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C [131°F] and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
[40 C.F.R. § 60.753(c)]

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

Subpart XXX contains a similar operating limit for temperature, including the ability to establish HOVs. Subpart XXX requires that the facility monitor either oxygen or nitrogen but does not establish an operating limit as is done by Subpart WWW.

Temperature HOVs

NEWSME previously requested, and the Department approved, a temperature HOV of 150 °F for 23 gas collectors. Gas temperatures at some of these collectors have been decreasing over the past ten months. NEWSME has stated that the following collectors are no longer in need of HOVs for temperature:

Relinquished Temperature HOVs		
JRGCT705	JR-GW-48	JR-GW-66
JRGCT707	JR-GW57R	JR-GW-67

The Department agrees that temperature HOVs for these collectors are no longer required and that this change is consistent with continued appropriate operation of the landfill gas collection system.

Following is an updated list of gas collectors with previously approved HOVs which will continue to have an HOV of 150 °F.

Remaining Temperature HOVs			
JRGCT508	JRGCT817	JR-GW-25	JR-GW-75
JRGCT511	JR-GW-13	JR-GW30R	JR-GW-76
JRGCT704	JR-GW19R	JR-GW31R	JR-GW-83
JRGCT706	JR-GW20R	JR-GW-33	
JRGCT711	JR-GW23R		

Oxygen Level HOVs

NEWSME previously requested, and the Department approved, an oxygen level HOV of 15% for seven gas collectors. NEWSME has stated that the following collectors are no longer in need of HOVs for oxygen content:

Relinquished Oxygen HOVs	
JR-GW22R	JR-GW-39
JR-GW-29	

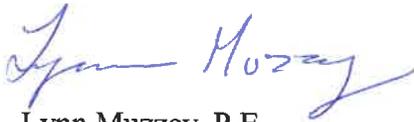
The Department agrees that oxygen HOVs for these collectors are no longer required and that this change is consistent with continued appropriate operation of the landfill gas collection system.

Following is an updated list of gas collectors with previously approved HOVs which will continue to have an HOV of 15% oxygen.

Remaining Oxygen HOVs	
JR-GW-32	JR-LC-5
JR-GW-M	JR-LPC-4

If you have any questions about this matter, please contact me at (207) 287-2229 or lynn.muzzey@maine.gov.

Sincerely,



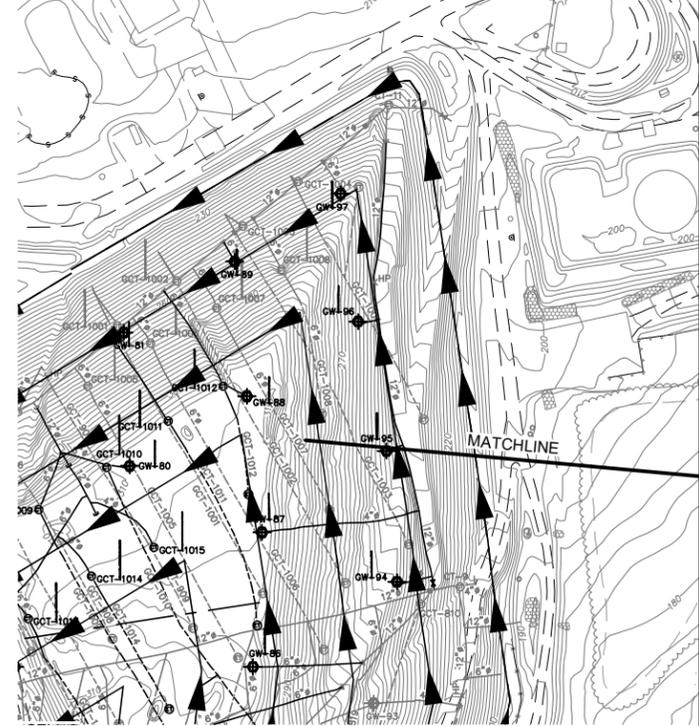
Lynn Muzzey, P.E.
Air Licensing Section Supervisor

cc: Jeffery Doris [Sanborn Head]
Tanya Hovell [Maine DEP]
Kathy Tarbuck [Maine DEP]

APPENDIX B

LANDFILL SURFACE MONITORING

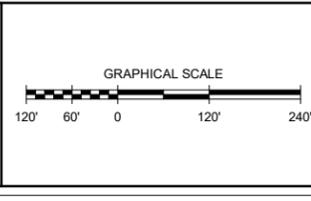
MAJEL, D. (SANBORN HEAD & ASSOCIATES, INC.)
 PROJECT NO. 2343.20
 DATE: 1/15/2020
 DRAWN BY: J. SHAW
 DESIGNED BY: J. SHAW
 REVIEWED BY: J. DORIS
 PROJECT MGR: J. DORIS
 PIC: D. ADAMS
 DATE: JANUARY 2020



- NOTES:**
1. THE EXISTING LANDFILL GAS EXTRACTION SYSTEM INFRASTRUCTURE FEATURES SHOWN ARE BASED ON A COMBINATION OF DESIGN AND AS-BUILT DOCUMENTATION AVAILABLE TO SANBORN, HEAD & ASSOCIATES, INC. (SANBORN HEAD). ACTUAL LOCATIONS OF INDIVIDUAL FEATURES MAY BE DIFFERENT THAN SHOWN.
 2. THE BASE MAP SHOWN IS PREPARED BY SEVEE & MAHER ENGINEERS, INC. PHOTO DATE JUNE 26, 2018. VERTICAL DATUM: BRASS PLUG AT PUMP STATION. HORIZONTAL DATUM: MAINE STATE COORDINATES EAST ZONE NAD 83. GROUND CONTROL BY PLISGA & DAY LAND SURVEYORS, BANGOR, MAINE.
 3. THIS WORKSHEET IS INTENDED TO DEPICT THE SURFACE MONITORING LOCATIONS RELATIVE TO THE EXISTING GAS SYSTEM FEATURES

LEGEND:

	EXISTING		10-FOOT CONTOUR
			2-FOOT CONTOUR
			LIMIT OF WASTE CONTAINMENT
			CELL LIMIT
			EDGE OF ROAD
			LANDFILL GAS CONVEYANCE PIPE
			LANDFILL GAS COLLECTION TRENCH (PERFORATED PIPE)
			LIMIT OF MARSH
			FENCE LINE
	GW-8		LANDFILL GAS EXTRACTION WELL
	GCT-21		COLLECTION TRENCH WELLHEAD
			COLLECTION TRENCH TERMINATION
			PIPE END CAP
			LEACHATE COLLECTION PIPE CLEANOUT
			LEACHATE COLLECTION INLET
			LANDFILL GAS EXTRACTION WELLHEAD
			RIPRAP AREAS
			MONITORING PATH



NO.	DATE	DESCRIPTION	BY

DRAWN BY: J. SHAW
 DESIGNED BY: J. SHAW
 REVIEWED BY: J. DORIS
 PROJECT MGR: J. DORIS
 PIC: D. ADAMS
 DATE: JANUARY 2020

GCCS PLAN
JUNIPER RIDGE LANDFILL
 OLD TOWN, MAINE

SURFACE MONITORING PLAN

PROJECT NUMBER: 2343.20	FIGURE NUMBER: B
----------------------------	---------------------

Table B-1
3rd Quarter Surface Emissions Monitoring
Juniper Ridge Landfill
Old Town, Maine

Name	Initial Reading Date	Initial Reading	Initial Reading Notes	Initial Corrective Action	First Rescan Date	First Rescan Reading	Second Rescan Date	Second Rescan Reading	Status
JRGCT601	9/15/2019	5,671 ppm	Rip in liner below JRGCT601	Liner repaired	9/27/2019	2.9 ppm	10/15/2019	70 ppm	Resolved
JR-GW-I	9/15/2019	2,094 ppm	Exposed cut liner below JR-GW-I	Clay placed over exposure	9/27/2019	2.2 ppm	10/15/2019	58 ppm	Resolved
JR-GW-93	9/15/2019	9,438 ppm	Rip in liner above JR-GW-93	Liner repaired	9/27/2019	2.7 ppm	10/15/2019	2.3 ppm	Resolved

Notes:

1. The initial surface scans performed by Juniper Ridge Landfill (JRL) personnel on the dates noted above detected locations with measured exceedances of the methane concentration limit (500 ppm) established by the NSPS (40 CFR 60.755).



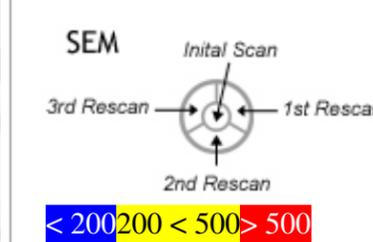
Juniper Ridge Landfill



Color Legend

Symbol Legend

- Other
- Condensate Trap
- Horizontal
- Gas Well
- Cleanout
- Flare



A radius of influence of 100 ft. is depicted at each device.

Reporting Period: Jul. 1, 2019 to Oct. 1, 2019

Map Generated On: 01/17/2020

SEM: 09/15/2019 - 10/15/2019

200 ft

Table B-2
4th Quarter Surface Emissions Monitoring
Juniper Ridge Landfill
Old Town, Maine

Name	Initial Reading Date	Initial Reading	Initial Reading Notes	Initial Corrective Action	First Rescan Date	First Rescan Reading	Second Rescan Date	Second Rescan Reading	Status
N/A	10/20/2019	< 500 ppm	No exceedances—see Note 1	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

1. The initial surface scans performed by Juniper Ridge Landfill (JRL) personnel on the dates noted above detected zero locations with measured exceedances of the methane concentration limit (500 ppm)

Juniper Ridge Landfill



Color Legend

Symbol Legend

- Other
- Condensate Trap
- Horizontal
- Gas Well
- Cleanout
- Flare

A radius of influence of 100 ft. is depicted at each device.

Reporting Period:
 Oct. 1, 2019 to Jan. 1, 2020
 Map Generated On: 01/16/2020

200 ft.

APPENDIX C
CONTROL SYSTEM SUMMARY

**Table C-1
Control System Operating Status Summary**

**Juniper Ridge Landfill
Old Town, Maine**

Date	Events	Approximate Duration of Control System Shutdown (Hours)	Notes
07/08/2019	Shutdown/Startup	0.3	Power bump
07/12/2019	Shutdown/Startup	0.3	Power failure
07/12/2019	Shutdown/Startup	0.3	Power restored
07/17/2019	Shutdown/Startup	0.9	Cleaned flame arrester
07/28/2019	Shutdown/Startup	0.3	Power bump
08/04/2019	Shutdown/Startup	0.3	Power failure
08/07/2019	Shutdown/Startup	0.5	Power bump
08/20/2019	Shutdown/Startup	7.2	Replaced flare stack base
09/03/2019	Shutdown/Startup	0.3	Electrical work on flare
09/03/2019	Shutdown/Startup	0.3	Electrical work on flare
09/05/2019	Shutdown/Startup	1.8	Cleaned flamer arrester
09/11/2019	Shutdown/Startup	0.3	Inlet KCP high level
09/20/2019	Shutdown/Startup	2.3	Replace flare trap pump
09/20/2019	Shutdown/Startup	0.3	Clean inlet KCP drain
09/24/2019	Shutdown/Startup	0.3	Power bump
09/27/2019	Shutdown/Startup	0.3	Thiopaq® low redox
09/30/2019	Shutdown/Startup	0.3	Low level to solution pump tank
10/12/2019	Shutdown/Startup	0.3	Flare shut down during blower VFD trouble-shooting
10/16/2019	Shutdown/Startup	2.8	Replace flare blower VFD
10/17/2019	Shutdown/Startup	1.5	Power failure
10/17/2019	Shutdown/Startup	1.3	Plugged flame arrester, trouble-shooting flare blower VFD
10/17/2019	Shutdown/Startup	0.3	Main power restored
10/29/2019	Shutdown/Startup	0.3	Power bump
10/31/2019	Shutdown/Startup	0.2	Main power failure
11/01/2019	Shutdown/Startup	1.0	Power outage
11/01/2019	Shutdown/Startup	1.8	Replace flare blower belt; cleaned flame arrester
11/01/2019	Shutdown/Startup	0.3	Flare out after power restoration
11/05/2019	Shutdown/Startup	0.3	Power bump
11/08/2019	Shutdown/Startup	0.3	Low redox during blower VFD test
11/21/2019	Shutdown/Startup	1.5	Flame arrester plugged; power bump
11/28/2019	Shutdown/Startup	0.3	Power bump
11/28/2019	Shutdown/Startup	0.3	Clean flare drain pipe
11/28/2019	Shutdown/Startup	0.3	Power bump
11/28/2019	Shutdown/Startup	6.0	Power bump
12/08/2019	Shutdown/Startup	0.3	Unexplained, possible operator error
12/08/2019	Shutdown/Startup	0.3	Operator error (E-Stop)
12/11/2019	Shutdown/Startup	0.5	Sargent tying into 12-inch-diameter header for vacuum restoration
12/15/2019	Shutdown/Startup	0.3	Power bump
12/15/2019	Shutdown/Startup	0.3	Power bump
12/17/2019	Shutdown/Startup	1.0	Power failure; cleaned flame arrester
12/30/2019	Shutdown/Startup	0.6	Power bump

Notes:

1. This table presents a summary of the Startup, Shutdown, and Malfunction (SSM) Reports maintained at Juniper Ridge Landfill (JRL) for the Gas Collection and Control System (GCCS).

APPENDIX D

ACTIONS TAKEN TO IMPROVE THE QUALITY AND QUANTITY OF GAS COLLECTED

**Table D-1
Actions to Improve the Quality and Quantity of Gas Collected**

**Juniper Ridge Landfill
Old Town, Maine**

Improvement #	Recommended Improvements	Date Recommended	Anticipated Completion Date	Status	Date Completed	Performed By
459	GCT908 tied into GCT916	07/03/2019	07/03/2019	Completed	7/3/2019	Paul and Joe
460	GCT-1104 Installed	07/23/2019	07/23/2019	Completed	7/23/2019	Paul and Joe
461	GW-42B Well Drilled	07/22/2019	07/22/2019	Completed	7/22/2019	Contractors
462	GW-50B Well Drilled	07/22/2019	07/22/2019	Completed	7/22/2019	Contractors
463	GW-58B Well Drilled	07/22/2019	07/22/2019	Completed	7/22/2019	Contractors
464	GW-51B Well Drilled	07/23/2019	07/23/2019	Completed	7/23/2019	Contractors
465	GW-59B Well Drilled	07/23/2019	07/23/2019	Completed	7/23/2019	Contractors
466	GW-60B Well Drilled	07/23/2019	07/23/2019	Completed	7/23/2019	Contractors
467	GW-69B Well Drilled	07/23/2019	07/23/2019	Completed	7/23/2019	Contractors
468	GW-78B Well Drilled	07/23/2019	07/23/2019	Completed	7/23/2019	Contractors
469	GW-68B Well Drilled	07/24/2019	07/24/2019	Completed	7/24/2019	Contractors
470	GW-68C Well Drilled	07/24/2019	07/24/2019	Completed	7/24/2019	Contractors
471	GW-77R Well Drilled	07/24/2019	07/24/2019	Completed	7/24/2019	Contractors
472	GW-33R Well Drilled	07/25/2019	07/25/2019	Completed	7/25/2019	Contractors
473	GW-76R Well Drilled	07/25/2019	07/25/2019	Completed	7/25/2019	Contractors
474	GW-78C Well Drilled	07/25/2019	07/25/2019	Completed	7/25/2019	Contractors
475	GW-79B Well Drilled	07/25/2019	07/25/2019	Completed	7/25/2019	Contractors
476	GW-86B Well Drilled	07/25/2019	07/25/2019	Completed	7/25/2019	Contractors
477	GW-98 Well Drilled	07/26/2019	07/26/2019	Completed	7/26/2019	Contractors
478	GW-104 Well Drilled	07/26/2019	07/26/2019	Completed	7/26/2019	Contractors
479	JRCT1104 Well Head Installed	07/24/2019	07/24/2019	Completed	7/24/2019	Paul and Joe
480	JR-GW69B Well Head Installed	07/30/2019	07/30/2019	Completed	7/30/2019	Contractors
481	JR-GW78B Well Head Installed	07/30/2019	07/30/2019	Completed	7/30/2019	Contractors
482	JR-GW60B Well Head Installed	07/31/2019	07/31/2019	Completed	7/31/2019	Contractors
483	JR-GW51B Well Head Installed	07/31/2019	07/31/2019	Completed	7/31/2019	Contractors
484	JR-GW-98 Well Head Installed	08/02/2019	08/02/2019	Completed	8/2/2019	Contractors
485	JR-GW104 Well Head Installed	08/02/2019	08/02/2019	Completed	8/2/2019	Contractors
486	JR-GW42B Well Head Installed	08/02/2019	08/02/2019	Completed	8/2/2019	Paul and Andrew
487	JR-GW50B Well Head Installed	08/02/2019	08/02/2019	Completed	8/2/2019	Contractors
488	JR-GW58B Well Head Installed	08/02/2019	08/02/2019	Completed	8/2/2019	Contractors
489	Broken Temperature gauge replaced	08/05/2019	08/05/2019	Completed	8/5/2019	Nico
490	JR-GW68B Well Head Installed	08/05/2019	08/05/2019	Completed	8/5/2019	Contractors
491	JR-GW59B Well Head Installed	08/05/2019	08/05/2019	Completed	8/5/2019	Nico
492	JR-GW76B Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
493	JR-GW77R Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
494	JR-GW78C Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
495	JR-GW86B Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
496	JR-GW79B Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
497	JR-GW68C Well Head Installed	08/06/2019	08/06/2019	Completed	8/6/2019	Nico
498	JRCT1107 Well Head Installed	08/08/2019	08/08/2019	Completed	8/8/2019	Paul and Joe
499	JRCT1108 Well Head Installed	08/10/2019	08/10/2019	Completed	8/10/2019	Paul and Joe
500	JRCT1105 Well Head Installed	08/22/2019	08/22/2019	Completed	8/22/2019	Paul and Joe

**Table D-1
Actions to Improve the Quality and Quantity of Gas Collected**

**Juniper Ridge Landfill
Old Town, Maine**

Improvement #	Recommended Improvements	Date Recommended	Anticipated Completion Date	Status	Date Completed	Performed By
501	JRCT1110 Well Head Installed	08/23/2019	08/23/2019	Completed	8/23/2019	Paul and Joe
502	JRCT1106 Well Head Installed	08/23/2019	08/23/2019	Completed	8/23/2019	Paul and Joe
503	JRCT1109 Well Head Installed	08/23/2019	08/23/2019	Completed	8/23/2019	Paul and Joe
504	Fix JR-GW20R hole in its hose	09/06/2019	09/06/2019	Completed	9/6/2019	Nico
505	JR-OP11NE collector installed	09/10/2019	09/10/2019	Completed	9/10/2019	Paul and Joe
506	JRCT1111 wellhead installed	09/13/2019	09/13/2019	Completed	9/13/2019	Paul and Joe
507	JRGCT910 wellhead extended	09/17/2019	09/17/2019	Completed	9/17/2019	Paul and Joe
508	JRGCT908 wellhead extended	09/18/2019	09/18/2019	Completed	9/18/2019	Paul and Joe
509	JRGCT907 wellhead extended	09/23/2019	09/23/2019	Completed	9/23/2019	Paul and Joe
510	JRGCT907 wellhead extended	09/24/2019	09/24/2019	Completed	9/24/2019	Paul and Joe
511	JRGCT906 wellhead extended	09/24/2019	09/24/2019	Completed	9/24/2019	Paul and Joe
512	JRGCT905 wellhead extended	09/25/2019	09/25/2019	Completed	9/25/2019	Paul and Joe
513	JRGCT915 wellhead extended	10/08/2019	10/08/2019	Completed	10/8/2019	Paul and Rob
514	JRGCT914 wellhead extended	10/08/2019	10/08/2019	Completed	10/8/2019	Paul and Rob
515	JRGCT913 wellhead extended	10/08/2019	10/08/2019	Completed	10/8/2019	Paul and Rob
516	GW-68 Repaired valve	10/11/2019	10/18/2019	Completed	10/15/2019	Paul and Rob
517	GW-69 Repaired valve	10/11/2019	10/18/2019	Completed	10/15/2019	Paul and Rob
518	GW-39 Repaired Valve	10/11/2019	10/18/2019	Completed	10/15/2019	Paul and Rob
519	GCT924 - Repaired valve	10/11/2019	10/18/2019	Completed	10/15/2019	Paul and Rob
520	GCT1010 - Repaired valve	10/11/2019	10/18/2019	Completed	10/16/2019	Paul and Rob
521	GCT705 - Repaired valve	10/11/2019	10/18/2019	Completed	10/16/2019	Paul and Rob
522	Drilled and Installed JR-GW106	09/30/2019	11/30/2019	Completed	11/1/2019	Recovery Drilling
523	Drilled and Installed JR-GW102	09/30/2019	11/30/2019	Completed	11/1/2019	Recovery Drilling
524	Drilled and Installed JR-GW101	09/30/2019	11/30/2019	Completed	11/1/2019	Recovery Drilling
525	Drilled and Installed JR-GW100	09/30/2019	11/30/2019	Completed	11/11/2019	Recovery Drilling
526	Drilled and Installed JR-GW-99	09/30/2019	11/30/2019	Completed	11/11/2019	Recovery Drilling
527	Drilled and Installed JR-GW-62	09/30/2019	11/30/2019	Completed	11/12/2019	Recovery Drilling
528	Drilled and Installed JR-GW-72	09/30/2019	11/30/2019	Completed	11/12/2019	Recovery Drilling
529	GW-33R Connect Vacuum	10/31/2019	11/15/2019	Completed	11/6/2019	Contractor (Sargent)
530	Discontinued M	11/11/2019	11/11/2019	Completed	11/11/2019	Paul and Rob
531	GW-15 Extension	11/22/2019	11/22/2019	Completed	11/22/2019	Paul and Rob
532	GW-24 Extension	11/25/2019	11/25/2019	Completed	11/25/2019	Paul and Rob
533	GCT-707 Extension	11/25/2019	11/25/2019	Completed	11/25/2019	Paul and Rob
534	GW-16 Extension	11/25/2019	11/25/2019	Completed	11/25/2019	Paul and Rob
535	Discontinued GCT3A1	12/02/2019	12/17/2019	Completed	12/6/2019	Rob
536	Installed odor pipe on inside ditch of road in S-E corner of cell 10	12/11/2019	12/18/2019	Completed	12/12/2019	Paul and Joe
537	JRCT1112 Well Head Installed	12/20/2019	12/20/2019	Completed	12/20/2019	Paul and Rob
538	Fix Vacuum leak in GW-69B	12/21/2019	12/21/2019	Completed	12/21/2019	Nicolas
539	Put Fernco Cap on Methane Well near 402	12/22/2019	12/22/2019	Completed	12/22/2019	Nicolas
540	Put Fernco Cap on Vacuum pipe near GW-85	12/22/2019	12/22/2019	Completed	12/22/2019	Nicolas
541	Installed, perforated pipe under apron, covered by a mound of dirt around GW-69 to control odor.	12/27/2019	12/27/2019	Completed	12/27/2019	Paul and Joe