COVANTA
Powering Today. Protecting Tomorrow.

COVANTA BRISTOL, INC.
170 Enterprise Drive
Bristol, CT 06010
Tel 860 589 6470
Fax 860 583 3398

February 25, 2021

Central Permit Processing Unit
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Re: Permit Application for Construction and Operation of a Biomedical Waste Facility
Covanta Bristol, Inc.
170 Enterprise Drive
Bristol, CT 06010
Permit No. 01701072-PO

To Whom it May Concern:

On behalf of Covanta Bristol, Inc. (Covanta), please allow the following correspondence and enclosed documents to serve as Covanta's application for a Permit to Construct and Operate a Solid Waste Facility at the above-referenced facility. This application is being submitted to the Connecticut Department of Energy and Environmental Protection (CT DEEP) to address the addition of biomedical waste (BMW) to the facility's existing operations and solid waste streams. Based on discussions with the CT DEEP, a single application will be submitted as a Modification to the Resource Recovery Facility and a New Application for a Biomedical Waste Treatment Facility. Additionally, and as confirmed during pre-application discussions with the CT DEEP, this application will incorporate information associated with the addition of biomedical waste. No additional changes to the existing operations are proposed as part of this project.

The enclosed permit application includes Permit Application Transmittal Form (DEEP-APP-001), Permit Application for Construction and Operation of a Solid Waste Facility (DEP-SW-APP-100), and the required supporting documents. Two copies of the application have been provided for your review. Also, enclosed is fee payment in the amount of $49,250 made payable to Department of Energy and Environmental Protection (Check No. 0000385423).

Should additional information or detail be necessary, please feel free to contact me at 978-697-6547.

Thank you for your courtesies and cooperation with this filing and request.

Sincerely,

George Drew
Regional Environmental Director

Enclosure

cc: Gary Pierce, Covanta
Tonya King, Covanta
Rachel Rosen, Burns & McDonnell

Covanta Energy, LLC
Covanta Energy, LLC
445 South Street
Morristown NJ 07960

JPMORGAN CHASE BANK N.A.
Chicago IL

70-2322/719

0000385423

Date **Feb/03/2021** **Pay Amount** **$49,250.00*****

****FORTY-NINE THOUSAND TWO HUNDRED FIFTY AND XX/100 DOLLAR****

PAY TO THE ORDER OF
CONNECTICUT DEPT OF ENERGY
TITLE V TENTATIVE DETERMINATION
79 ELM ST.
ATTN: DENNISE GOULBOURNE
HARTFORD, CT 06106-5127

Covanta Energy
Authorized Signature

⑈0000385423⑈ ⑆071923226⑆ 958163081⑈

Check Date:	Feb/03/2021		Supplier Number: 0000050641		Check No:	0000385423
Invoice Number	**Invoice Date**	**Voucher ID**	**Gross Amount**	**Discount Taken**	**Late Charge**	**Paid Amount**
012920	Jan/29/2020	00086035	49,250.00	0.00	0.00	49,250.00

Check Number	Date		Total Gross Amount	Total Discounts	Total Late Charge	Total Paid Amount
0000385423	Feb/03/2021		$49,250.00	$0.00	$0.00	$49,250.00

Covanta Bristol, Inc.
Bristol Resource Recovery Facility
170 Enterprise Drive, Bristol, CT 06010

Application to Amend Solid Waste Permit to Operate PTO No. 01701072-PO and Process Biomedical Waste

February 2021

Connecticut Department of Energy & Environmental Protection

CPPU USE ONLY
App #:_____
Doc #:_____
Check #:_____
_____

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- **If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State.*
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*

Applicant: **Covanta Bristol, Inc**

Mailing Address: **170 Enterprise Drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Business Phone: **860-589-6470** ext.:

Contact Person: **George Drew** Phone: **978-697-6547** ext.

E-Mail: **gdrew@covanta.com**

Applicant (check one): ☐ individual ☒ *business entity ☐ federal agency ☐ state agency ☐ municipality ☐ tribal

*If a business entity, list type (e.g., corporation, limited partnership, etc.): **Corporation**

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Please provide the following information to be used for *billing purposes only*, if different:

Company/Individual Name:

Mailing Address:

City/Town: State: Zip Code:

Contact Person: Phone: ext.

Part II: Project Information

Brief Description of Project: *(Example: Development of a 50 slip marina on Long Island Sound)*

Covanta is proposing to add biomedical waste to its existing solid waste permit (Permit No. 01701072-PO).

Location (City/Town): **Bristol**

Other Project Related Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
Title V Air Operating Permit	**CT DEEP**		**8/21/2015**		**026-0055-TV**

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review ☐ Revision ☐ minor mod	$940.00			1 + 0
	Title V Operating Permits ☐ Revision ☐ minor mod ☐ non-minor mod	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	$1300.00			1 + 1
	To Sanitary Sewer (POTW)	$1300.00			1 + 1
	To Surface Water (NPDES)	$1300.00			1 + 1
	WATER PLANNING AND MANAGEMENT				
	Dam Safety	none			1 + 2
	Domestic Sewage Treatment Works (For municipal and private sewage treatment facilities discharging to surface waters)	$1300.00/ Mod = $940			1 + 1
	Water Diversion (consumptive) and Registrations	★			1 + 5
	LAND AND WATER RESOURCES				
	Flood Management Certification	none			1 + 1
	Flood Management Certification Exemption	none			1 + 1
	Inland Wetlands and Watercourses (State Agencies Only)	none			1 + 5
	Inland 401 Water Quality Certification	none			1 + 5
	FERC- Hydropower Projects- 401 Water Quality Certification	none			
	Water Diversion (non-consumptive)	★			1 + 5
	Certificate of Permission	$375.00			1 + 2
	Coastal 401 Water Quality Certification	none			1 + 2
	Structures and Dredging/and Fill/Tidal Wetlands	$660.00			1 + 2
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Disruption of a Solid Waste Disposal Area	$0			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	$100.00			1 + 0
	Stewardship	$4000.00			1 + 1
Mo/Ne	Solid Waste Facilities	★	1	$49,250	1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	1	$49,250	
	GENERAL PERMITS and AUTHORIZATIONS	Subtotals Page 3 &4 ➡	0	$0	
	Enter subtotals from Part IV, pages 3 - 6 of this form	Subtotals Page 5 ➡	0	$0	
		Subtotals Page 6 ➡	0	$0	
		TOTAL ➡	2	$49,250	
	☐ Indicate whether municipal discount or state waiver applies.	Less Applicable Discount ➡			
		AMOUNT REMITTED ➡		$49,250	

Check # ➡ 0000385423

Check or money order should be made payable to:
"Department of Energy and Environmental Protection"

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
☐	Limit Potential to Emit from Major Stationary Sources of Air Pollution	$2760.00			1 + 0
☐	Diagnostic and Therapeutic X-Ray Devices (Medical X-Ray) Registration	$190.00/Xray device			1 + 0
☐	Radioactive Materials and Industrial Device Registration (Ionizing Radiation)	$200.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	License Revocation Request	$0			★★
☐	Other, (please specify):				
	WATER DISCHARGES				
	Categorical Industry User to a POTW				
☐	Discharges ≥ 10,000 gpd	$6250.00			1 + 0
☐	Discharges < 10,0000 gpd	$3125.00			
	Comprehensive Discharges to Surface Water and Groundwater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
☐	Domestic Sewage	$625.00			1 + 0
☐	Food Service Establishment Wastewater	No Registration			
	Groundwater Remediation Wastewater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
	Miscellaneous Discharges of Sewer Compatible Wastewater				
☐	Registration Only	$500.00			1 + 0
☐	Approval of Registration by DEEP	$1000.00			
☐	Nitrogen Discharges	No Registration			
☐	Point Source Discharges from Application of Pesticides	$200.00			1 + 0
☐	Stormwater Associated with Commercial Activities	$300.00			1 + 0
	Stormwater Associated with Industrial Activities				
☐	No Exposure Certification	$250.00			1 + 0
☐	<50 employees–see general permit for additional requirements	$500.00			
☐	>50 employees–see general permit for additional requirements	$1000.00			
☐	Stormwater & Dewatering Wastewaters-Construction Activities	★			1 + 0
☐	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	$625.00			1 + 0
☐	Stormwater from DOT Separate Storm Sewer Systems (DOT MS4)	$0			1 + 0
☐	Subsurface Sewage Disposal Systems Serving Existing Facilities	★ ★			1 + 0
☐	Swimming Pool Wastewater - Public Pools and Contractors	$500.00			1 + 0
	Vehicle Maintenance Wastewater				
☐	Registration Only	$625.00			1 + 0
☐	Approval of Registration by DEEP	$1250.00			
☐	Emergency/Temporary Authorization - Discharge to POTW	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Surface Water	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Groundwater	$1500.00			1 + 0
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	0	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	AQUIFER PROTECTION PROGRAM				
☐	Registration for Regulated Activities	$625.00			1 + 0
☐	Permit Application to Add a Regulated Activity	$1250.00			1 + 0
☐	Exemption Application from Registration	$1250.00			1 + 0
	WATER PLANNING AND MANAGEMENT				
☐	Dam Safety Repair and Alteration: Non Filing	No Registration			
☐	Dam Safety Repair and Alteration: Filing – No PE	$100.00			1 + 0
☐	Dam Safety Repair and Alteration: Filing – PE	$200.00			1 + 0
☐	Dam Safety Repair and Alteration: Approval of Filing	$250.00			1 + 0
☐	Diversion of Remediation Groundwater	No Registration			
☐	Diversion of Water for Consumptive Use: Reauthorization Categories	$2500.00			1 + 0
☐	Diversion of Water for Consumptive Use: Authorization Required	$2500.00			1 + 4
☐	Diversion of Water for Consumptive Use: Filing Only	$1500.00			1 + 1
☐	Water Resource Construction Activities	★			1 +0
☐	Emergency/Temporary Authorization	★★			★★
☐	Notice of High Hazard Dam or a Significant Hazard Dam	$0			1 +0
☐	Other, (please specify):				
	LAND AND WATER RESOURCES				
	Minor Coastal Structures				
☐	4/40 Docks/Access Stairs	$700.00			1 + 1
☐	Beach Grading	No Registration			
☐	Buoys or Markers	No Registration			
☐	Experimental Activities/Scientific Monitoring Devices	No Registration			
☐	Harbor Moorings	No Registration			
☐	Non-harbor Moorings	$250.00			1 + 1
☐	Osprey Platforms and Perch Poles	No Registration			
☐	Pump-out Facilities	No Registration			
☐	Swim Floats	No Registration			
	Coastal Maintenance				
☐	Backflow Prevention Structure	No Registration			
☐	Beach Grading/Raking	No Registration			
☐	Catch Basin Cleaning	No Registration			
☐	Coastal Remedial Activities Required by Order	$700.00			1 + 1
☐	Coastal Restoration	No Registration			
☐	DEEP Boat Launch Infrastructures	No Registration			
☐	DOT Infrastructures	No Registration			
☐	Marina and Mooring Field Reconfiguration	$700.00			1 + 1
☐	Minor Seawall Repair	No Registration			
☐	Placement of Cultch	No Registration			
☐	Reconstruction of Legally Existing Structure/Obstruction/Encroachment	$300.00			1 + 1
☐	Removal of Derelict Structures	No Registration			
☐	Residential Flood Hazard Mitigation	$100.00			1 + 1
☐	Temporary Access of Construction Vehicles/Equipment	No Registration			
☐	Programmatic General Permit	★			1 + 1
☐	Emergency/Temporary Authorization				
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	0	0	

★ See fee schedule on registration/application.

★★ Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	WASTE MANAGEMENT				
☐	Addition of Grass Clippings at Registered Leaf Composting Facilities	$500.00			1 + 0
☐	Beneficial Use Determination	★			1 + 0
☐	Collection and Storage of Post Consumer Paint	$0			1 + 0
☐	Connecticut Solid Waste Demonstration Project	$1000.00			1 + 0
	Construct and Operate a Commercial Facility for the Management of Recyclable Materials and Certain Solid Wastes (Commercial GP)	Initial/Mod Fee			
☐	Asbestos Containing Materials	$1,250.00/$ 625			1 + 0
☐	Ash Residue	$1,250.00/$ 625			1 + 0
☐	Clean Wood: Tier III	$500.00/$250			1 + 0
☐	Clean Wood: Tier II	$250.00/$125			1 + 0
☐	Construction and Demolition Waste: Tier III	$1,250.00/$625			1 + 0
☐	Construction and Demolition Waste: Tier II	$500.00/$250			1 + 0
☐	Non-RCRA Hazardous Waste/Compatible Solid Wastes	$1,250.00/$625			1 + 0
☐	Recyclables	$500.00/$250			1 + 0
☐	Universal Wastes/Compatible Solid Wastes	$1,250.00/$625			1 + 0
	Contaminated Soil and/or Staging Management (Staging/Transfer)				
☐	New Registrations	$250.00			1 + 0
☐	New Approval of Registrations	$1500.00			1 + 0
☐	Renewal of Registrations	$250.00			1 + 0
☐	Renewal of Approval of Registrations	$750.00			1 + 0
☐	Disassembling Used Electronics	$2000.00			1 + 0
☐	Leaf Composting Facility	$0			1 + 1
☐	Municipal Transfer Station	$800.00			1 + 1
☐	One Day Collection of Certain Wastes and Household Hazardous Waste	$1000.00			1 + 0
☐	Sheet Leaf Composting Notification	$0			★★
	Special Waste Authorization				
☐	Landfill or RRF Disposal	$660.00			
☐	Asbestos Disposal	$300.00			1 + 0
☐	homeowner	$0			
☐	Storage and Processing of Asphalt Roofing Shingle Waste	$2500.00			1 + 0
☐	Storage and Processing of Scrap Tires for Beneficial Use	$1250.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	REMEDIATION				
☐	In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
☐	In Situ Groundwater Remediation: Chemical Oxidation	$500.00			1 + 0
☐	Emergency/Temporary Authorization	★			★★
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡			

★See fee schedule on registration/application.

★★Contact the specific permit program for this information. (Contact numbers are provided in the instructions)

Affirmative Action, Equal Employment Opportunity and Americans with Disabilities

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). Please contact us at (860) 418-5910 or deep.accommodations@ct.gov if you: have a disability and need a communication aid or service; have limited proficiency in English and may need information in another language; or if you wish to file an ADA or Title VI discrimination complaint.

Permit Application for Construction and Operation of a Solid Waste Facility

Use the "Instructions" document (DEP-SW-INST-100) to assist you in completing this form. Print or type unless otherwise noted. Your submittal to DEP must include: *Permit Application Transmittal Form* (DEP-APP-001); Completed Application Form (this form, DEP-SW-APP-100); all required supporting documents; and Fee.

Part I: Application and Permit Type

In the table below, check only one box in the left column to identify the type of solid waste facility for which you are applying for a permit. Complete one permit application for each solid waste facility requiring a permit.

√	Solid Waste Facility Types (Check the type of permit you are applying for)	Initial Fee	DEP Use Only	
			Application No.	Permit No.
Solid Waste Disposal Area/Landfill				
☐	Municipal Solid Waste	$37,750.00		
☐	Residue or other Solid Waste	$26,500.00		
☐	Closure Plan - Active Site	$610.00		
☐	Closure Plan - Inactive Site	$4,000.00		
☐	Closure Plan – Unpermitted Site	$3,000.00		
Volume Reduction Plant				
☐	Resources Recovery Facility	$138,250.00		
☐	Intermediate Processing Center	$14,500.00		
☐	Composting ≤100 Tons/day Source Separated Organic Material	$7,750.00		
☐	Composting >100 tons/day Source Separated Organic Material	$10,000.00		
☐	Construction and Demolition Waste ≤100 tons/day	$7,750.00		
☐	Construction and Demolition Waste >100 tons/day	$14,500.00		
☐	Land Clearing/Clean Wood Processing	$10,000.00		
☐	Sludge Processing	$7,750.00		
☐	Other (i.e., Shredder, Baler, Compactor, etc.) ≤100 tons/day *(Please specify type)*	$10,000.00		
☐	Other (i.e., Shredder, Baler, Compactor, etc.) >100 tons/day *(Please specify type)*	$14,500.00		
☐	Renewal - Resources Recovery Facility	$1,400.00		
☐	Renewal - Composting, Source Separated Organic Material	$330.00		
☐	Renewal - All Others	$660.00		

Part I: Application and Permit Type (continued)

	Solid Waste Facility Types (Check the type of permit you are applying for)	Initial Fee	DEP Use Only	
			Application No.	Permit No.
Transfer Stations				
☐	≤75 tons/day	$7,750.00		
☐	>75 and ≤150 tons/day	$10,000.00		
☐	>150 tons/day	$11,500.00		
☐	Renewal	$660.00		
Biomedical Waste Treatment Facility				
☒	New Application	$19,000.00		
☐	Renewal	$660.00		
Minor Permit Amendments				
☐	Solid Waste Disposal Area/Landfill	$1,375.00		
☐	All Others *(Please specify type of facility)*	$940.00		
Permit Modifications				
☐	*Regulatory Requirement Modification* A modification to an existing permit to authorize a change to satisfy new statute, regulation, permit or order. *(Please specify type of facility*	25% of the standard application fee, maximum of $11,500.00		
☒	*Permittee Initiated Modification* A modification to an existing permit to authorize a change in the approved or existing design, capacity, process or operation of the facility. *(Please specify type of facility)* **RRF**	50% of the standard application fee, maximum of $30,250.00		
☐	**Landfill Closure Plan Modification**	**$940.00**		

Existing Permit Information

If this application is for a renewal, minor amendment or modification of an existing permit or the facility was previously licensed by a general permit or an emergency or temporary authorization, provide:

Permit or Authorization Number(s)	***Expiration Date***	***Solid Waste Facility Type***
No. 01701072-PO	**11/20/2023**	**RRF**
01701245-SWDA	**11/20/2023**	**RRF - Special Waste**
A.6. Appoval 01701082-PO	**11/20/2023**	**RRF (Approval under Para. A.6.)**

Part II: Fee Information

The initial fee, as indicated on pages 1 and 2 of this application, is the total permit application fee due for a new permit or for a modification of an existing permit to construct, unless otherwise specified in the general statutes or in regulations adopted pursuant thereto. The initial fee for the permit type you are applying for is to be submitted with the application. The application will not be processed without the initial fee.

The fee for municipalities is 50% of the listed rates on pages 1 and 2 of this application (see section 22a-6(b) CGS).

Part III: Applicant Information

1. **Applicant**: Complete the information on the Applicant as indicated on the *Permit Application Transmittal Form* (DEP-APP-001):

   Name: **Covanta Bristol, Inc.**

   Mailing Address: **170 Enterprise Drive**

   City/Town: **Bristol** State: **CT** Zip Code: **06010**

   Business Phone: **978-697-6547** ext. Fax:

   Contact Person: **George Drew** Title: **Reg. Environ. Director**

   Email address: **gdrew@covanta.com**

   Property Interest: Check the appropriate boxes that represents the Applicant's interest in property at which the proposed activity is to be located:

   ☒ site owner ☐ option holder ☐ lessee

   ☐ easement holder ☒ operator ☐ other (specify)

   ☐ Check here if there are co-applicants. If so, label and attach additional sheet(s) with the required information as requested above.

2. Primary contact for this application if not contact person named in (1) above (e.g., environmental consultant, engineer, etc.):

   Firm Name: **Same**

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Contact Person: Title:

   Email address:

3. List attorney or other representative, if applicable:

   Firm Name: **Not Applicable**

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. **cell:** Fax:

   Attorney Name:

   Email address:

Part III: Applicant Information (continued)

4. Facility or Equipment Operator, if not the applicant::

   Firm Name: **Same**

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext. Fax:

   Name of Facility Foreman or Lead (on Site): Title:

   On-Site Phone:

   Operator Type (check one):

   ☐ Individual ☐ Private company ☐ Federal ☐ State ☐ Municipal

5. Owner of the property on which the Facility will be located:

   Name: **Covanta Bristol, Inc.**

   Mailing Address: **170 Enterprise Drive**

   City/Town: **Bristol** State: **CT** Zip Code: **06010**

   Business Phone: **978-697-6547** ext. Fax:

   Contact Person: **George Drew** Title: **Reg. Environ Director**

   Email address: **gdrew@covanta.com**

6. Connecticut Licensed Professional Engineer (P.E.):

   The applicant must retain the services of a qualified P.E. to prepare and certify the necessary engineering drawings including the operation and management plan for the facility.

   Name: **Jeffery Pope**

   Mailing Address: **1431 Opus Place, Suite 400**

   City/Town: **Downers Grove** State: **IL** Zip Code: **60515**

   Business Phone: **630-724-3328** ext. Fax:

   Email address: **jpope@burnsmcd.com**

   Connecticut PE Registration Number: **31033**

7. List any engineer(s) or other consultant(s) employed or retained to assist in preparing this submittal.

   Firm Name: **Burns & McDonnell**

   Mailing Address: **108 Leigus Road, Suite 1100**

   City/Town: **Wallingford** State: **CT** Zip Code: **06492**

   Business Phone: **203-464-3573** ext. Fax:

   Contact Person: **Rachel Rosen** Title: **Regional Environmental Mgr**

   Email address: **rmrosen@burnsmcd.com**

   Service Provided: **Assistance with permit application**

   ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Part IV: Site Information

1. **FACILITY NAME AND LOCATION**

Name of Facility(if applicable): **Bristol Resource Recovery Facility**

Street Address or Location Description: **170 Enterprise Drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds:

Latitude: **41°38'59.3"N** Longitude: **72°54'55.7"W**

Method of determination (check one): ☐ GPS ☐ USGS Map

☒ Other (please specify): **Google Maps**

If a USGS Map was used, provide the quadrangle name:

2. **INDIAN LANDS:** Is or will the Facility be located on federally recognized Indian lands? ☐ Yes ☒ No

3. **COASTAL AREA**: Is the proposed activity located within the coastal boundary as delineated on DEP approved coastal boundary maps? ☐ Yes ☒ No

If yes, and this application is for a new facility or modification for an existing facility, you must submit a *Coastal Consistency Review Form* (DEP-APP-004) with your application as "Attachment D".

4. **ENDANGERED OR THREATENED SPECIES:** Is the project site located within an area identified as a habitat for endangered, threatened or special concern species as identified on the "State and Federal Listed Species and Natural Communities Map"? ☒ Yes ☐ No Date of Map: **June 2019**

If yes, complete and submit a *Connecticut Natural Diversity Data Base* (CT NDDB) *Review Request Form* (DEP-APP-007) to the address specified on the form. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant. DEP strongly recommends that applicants complete this process before submitting the subject application.**

When submitting this **application** form, include copies of any correspondence to and from the NDDB, including copies of the completed *CT NDDB Review Request Form*, as Attachment E.

For more information visit the DEP website at www.ct.gov/dep/endangeredspecies (Review/Data Requests)
or call the NDDB at 860-424-3011.

5. **AQUIFER PROTECTION AREAS:** Is the site located within a town required to establish Aquifer Protection Areas, as defined in section 22a-354a through 354bb of the General Statutes (CGS)?

☒ Yes ☐ No

If yes, is the site within an area identified on a Level A or Level B map? ☐ Yes ☒ No

To view the applicable list of towns and maps visit the DEP website at www.ct.gov/dep/aquiferprotection

To speak with someone about the Aquifer Protection Areas, call 860-424-3020.

6. **CONSERVATION OR PRESERVATION RESTRICTION:** Is the property subject to a conservation or preservation restriction? ☐ Yes ☒ No

If Yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be submitted as Attachment F.

Part IV: Site Information (continued)

7. **ENVIRONMENTAL JUSTICE COMMUNITY:** Does the site include an applicable facility which is located within an Environmental Justice Community, as defined in the Environmental Justice Public Participation Guidelines (Guidelines) www.ct.gov/dep/environmentaljustice? ☒ Yes ☐ No

   If yes and this application is for a new or expanded permit, you must prepare an Environmental Justice Public Participation Plan (DEP-EJ-PLAN-001) in accordance with the Guidelines and submit such plan to:

   Environmental Justice Program
   Office of the Commissioner
   Department of Environmental Protection
   79 Elm Street
   Hartford, CT 06106-5127

   prior to submitting this application. Once you have received written approval for your Environmental Justice Public Participation Plan from the DEP, submit this completed application with a copy of the Plan approval as Attachment G.

8. **WETLAND AREA:** Is the site located in a wetland area? ☒ Yes ☐ No

9a. **WATER CLASSIFICATION:** Ground water classification of the site: **GB**

9b. **SURFACE WATER BODIES**: Identify surface water bodies which may be impacted: (Attach additional sheets if necessary)

Name: **Small Ponds + Unnamed Brooks to N, S, W**	Surface Water Classification: **A, B**
Name: **Eightmile River**	Surface Water Classification: **B**
Name:	Surface Water Classification:
Name:	Surface Water Classification:

Part V: Facility Information

1. **DISPOSAL AREA (Landfill):** *Complete this item if this application is for the construction and operation of a proposed new landfill, or the renewal or modification of an existing landfill permit.*

   LANDFILL TYPE (Check one): ☐ Municipal Solid Waste ☐ Residue or other Solid Waste

   a. **New Landfill**

      (i) Proposed Site Capacity (**cubic yards (cy)**:

      (ii) Estimated Operating Life (**years)**:

      (iii) Acreage of Property (**acres)**:

      (iv) Proposed Acreage for Waste Disposal (**acres)**:

   b. **Existing Landfill (Permit Modification)**

      (i) Current Permitted Site Capacity (**cy**):

      (ii) Remaining Permitted Site Capacity (**cy**):

      (iii) Proposed Increase in Site Capacity (**cy**):

      (iv) Current Operating Life: (as noted in previous permit application) (**years)**:

      (v) **Remaining Operating Life** (**years)**:

      (vi) Proposed Increase in Operating Life (**years)**:

      (vii) Acreage of Property (**acres)**:

      (viii) Current Permitted Acreage Remaining for Waste Disposal (**acres)**:

      (ix) Proposed Increase in Acreage for Waste Disposal (**acres)**:

2. **SOLID WASTE FACILITY:** *Complete this item if this application is for the construction and operation of a proposed new facility, or the renewal or modification of an existing facility permit.*

   a. FACILITY TYPE (Check one): *Pursuant to pre-application discussions, this application is submitted as a modification to the existing RRF and a new biomedical facility.*

   ☒ Volume Reduction Plant (VRP) ☐ Transfer Station ☒ Biomedical Waste Facility

   If you checked (VRP) indicate which type of VRP:

   ☒ Resource Recovery Facility ☐ Intermediate Processing Center

   ☐ Composting (source separated organic material) ☐ Construction and Demolition Waste

   ☐ Land Clearing/Clean Wood Processing ☐ Sludge Processing

   ☐ Other (specify):

   Note: Proposed solid waste facility's that are designed to use complicated processing equipment systems or new technologies, may be required to conduct equipment shakedown and performance testing. After the issuance of the proposed facility's Permit to Construct and the completion and approval of the facility's construction, DEP will issue a Temporary Permit to Operate (TPO) in order to complete the necessary equipment and performance testing. DEP will develop the final Permit to Operate based upon the P.E. certified test report(s).

Part V: Facility Information (continued)

2b. Complete this item if this application is for the construction and operation of a proposed new facility, or the renewal or modification of an existing facility permit.

	Proposed New Facility	Existing Facility	
		Current Permit	*Proposed Permit Modification
(i) Processing Capacity (tons per day)	**BMW: 57 TPD (weekly avg) 114 TPD (daily max)**	**See, Attachment A (Project Narrative -**	**Section 7.2 - Special Waste Processing Rate)**
(ii) Storage Capacity (cubic yards) (cy)	**BMW: 267 (Tipping Floor) 56 (Annex) 1,040 (Trailers)**	**See, Attachment K (O&M Plan)**	
(iii) Acreage of Property (acres)	**18.2**	**18.2**	**18.2**
(iv) Acreage Used by Facility (acres)	**Approximately 10**	**Approximately 10**	**Approximately 10**
(v) Operation (days/hours)	**7/24**	**7/24**	**7/24**
(vi) Processing Equipment:: In the rows across and below, list the types, sizes, number and design parameters of principle fixed equipment and rolling stock used. (i.e., chippers, loaders, etc.)	**1 forklift 3-sided bin 4-sided bin 1 yard jockey Automated waste lift and transport system**	**See, Cut Sheets at end of this form for representative equipment and systems**	**Actual systems to be selected following detailed design.**

☒ Check here if additional sheets are necessary, and label and attach them to this sheet.

(vii) ***** Proposed Permit Modification Type(s) *(check all that apply):*

☒ Equipment ☒ Facility Design ☒ Operations

☐ Other (please specify):

Part V: Facility Information (continued)

Pursuant to pre-application discussions, this application is submitted as a modification to the existing RRF and a new biomedical facility.

Facility Type (check one): ☐ Landfill ☒ VRP ☐ Transfer Station ☒ Biomedical Waste Facility

3. SOLID WASTE STORAGE VOLUMES: List the maximum on-site storage and storage method for each type of unprocessed and processed material. Storage of most waste materials require use of covers, secondary containment, impervious surfaces, and other measures as needed to prevent pollution.

Type of Solid Waste	Maximum Volume of On-Site Storage	Storage Method *waste must be stored under cover
*Antifreeze Liquid (gallons) (gl)		
Appliances with CFC (Freon) (units)		
*Asbestos Containing Material (cy)		
*Batteries, Lead-Acid (vehicle) (units)		
*Biomedical Waste (cy)	**267 (Tipping Floor) 56 (Annex) 1,040 (Trailers)**	**In lined boxes and containers. All BMW stored under cover or in fully enclosed trailers.**
*Capacitators, Flourescent Lght Ballasts (only from residential sources) (gl)		
*Cardboard (cy)		
*Casting Sand (cy)		
*Coal Fly Ash (cy)		
*Construction and Demolition Waste (cy)		
*Contaminated Dredge Spoils (cy)		
*Contaminated Soils (cy)		
*Covered Electronic Devices (kg) or (cy)		
*Food/Beverage Containers and Plastic Containers (cy)		
*Industrial (e.g., slag, sludge) (cy)		
*Metal, Scrap (cy)		
*Mixed Municipal Solid Waste (cy)		
*Oil Filters (cy)		
*Oil, Used (gl)		
Oversized MSW (furniture, mattresses, rugs and carpets) (cy)		

Part V: Facility Information (continued)

Facility Type (check one): ☐ Landfill ☒ VRP ☐ Transfer Station ☒ Biomedical Waste Facility

Type of Solid Waste	Maximum Volume of On-Site Storage	Storage Method *waste must be stored under cover
*Paints and Stains (gl)		
*Paper (cy)		
Propane Tanks with Valves (units)		
*Residue (i.e., ash generated from the combustion process at a Resource recovery facility) (cy)	**No change from existing. Combined MSW and BMW.**	**Piles and containers inside ash building and containers inside tipping building**
*Scrap Tires (crumb rubber) (cy)		
*Scrap Tires (shreds) (cy)		
*Scrap Tires (whole) (cy)		
*Sludge Ash (cy)		
*Sludge (drinking water treatment plant; e.g., alum)		
*Sludge (wastewater treatment plant) (cy)		
Swap Shop: Household Items		
Textiles and Shoes		
Wood, Clean – processed (wood chips) (cy)		
Wood, Clean – unprocessed (land clearing debris, brush, pallets) (cy)		
*Wood, Treated (painted, creosoted, etc.) (cy)		
Yard Waste (leaves and grass clippings) (cy)		
☐ Check here if additional sheets are necessary, and label and attach them to this sheet.		

Part V: Facility Information (continued)

Facility Type (check one): ☐ Landfill ☒ VRP ☐ Transfer Station ☒ Biomedical Waste Facility

Type of Solid Waste	Maximum Volume of On-Site Storage	Storage Method *waste must be stored under cover
Universal Waste *Note: the combined weight of all universal waste stored on-site shall not exceed 5000 kg*		
*Electronics, Used (kg)		
*Mercury Containing Lamps (kg)		
*Mercury Containing Thermometers, Thermostats (kg)		
*Batteries, Mixed (kg)		
Other material(s) (kg/lbs/cy/gl/units)		
☐ Check here if additional sheets are necessary, and label and attach them to this sheet.		

Part VI: Supporting Documents

Be sure to read the instructions (DEP-SW-INST-100) for information on completing the following attachments. Check the appropriate box for each attachment being submitted to verify that *all* applicable attachments have been submitted. When submitting any supporting documents:

(1) **label each document** with its respective attachment letter (e.g., Attachment A, etc.);

(2) **include the applicant's** name as entered on Part I of the *Permit Application Transmittal Form.*

☒ Attachment A: Executive Summary / Project Narrative

☒ Attachment B: *Applicant Compliance Information* (DEP-APP-002)

☐ Attachment C: An 8-1/2" x 11" copy of the relevant portion or an original of a United States Geological Survey (USGS) Topographic Quadrangle Map (scale: 1:24,000) with the regulated activity or project site outlined or pinpointed, as appropriate. (Not required for applications to construct and operate a solid waste disposal area (landfill).)

☐ Attachment D: *Coastal Consistency Review Form* (DEP-APP-004)

☒ Attachment E: CT NDDB Information

☐ Attachment F: Conservation or Preservation Restriction Information, if applicable.

☒ Attachment G: Copy of the Written Environmental Justice Public Participation Plan Approval Letter, if applicable. (Also, a final report documenting the implementation of the Environmental Justice Public Participation Plan is to be prepared and submitted before the Department issues a Notice of Tentative Determination.)

☐ Attachment H: *Background Information* (DEP-SW-APP-101)

☒ Attachment I: *Statement of Consistency with Solid Waste Management Plan* (DEP-SW-APP-102)

☒ Attachment J: *Business Information* (DEP-SW-APP-103)

☒ Attachment K: Facility Plan **(i.e. transfer stations; volume reduction plants "resource recovery facility, composting, construction and demolition waste, land clearing/clean wood, sludge processing, intermediate processing center"; biomedical waste treatment facility)**

- ☒ Engineering drawings such as area map/site plan/architectural and mechanical drawings; cross sections and specifications; mass balance diagrams; etc.
- ☒ Operation and Management Plan

☒ Attachment L: *Determination of Need Information* (DEP-SW-APP-104) (Required only for applications to construct and operate ash residue and mixed municipal solid waste landfills, construction or expansion of resources recovery facilities and mixed municipal solid waste composting facilities.)

☐ Attachment M: *Checklist for Solid Waste Disposal Areas (Landfills)* (DEP-SW/WD-APP-110)

☒ Attachment N: *Certification Regarding Activities Previously Licensed by DEP* (DEP-SW-APP-105)

Part VII: Applicant Certification

The applicant(s) *and* the individual(s) responsible for actually preparing the application must sign this part. An application will be considered insufficient unless *all* required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I will comply with all notice requirements as listed in Section 22a-6g of the General Statutes."

John Walker	02/17/21
Signature of Applicant	Date
John Walker	**Vice President**
Name of Applicant (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
George Drew	**Regional Environmental Manager**
Name of Preparer (print or type)	Title (if applicable)

☒ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, consultants, etc.).

Please submit::

(1) Permit Application Transmittal Form;
(2) completed Application Form;
(3) all required Supporting Documents;
(4) One copy of the entire package; and
(5) Fee.

To: CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Please remember to publish notice of the permit application immediately after submitting your completed application to DEP. Within five business days of the date the application is filed with DEP, send a copy of the notice to the chief elected official of the municipality in which the regulated activity is proposed, and provide DEP with the "Certification of Notice Form (DEP-APP-005A)" and an affidavit of publication from the newspaper.

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Signature of Applicant	Date
John Walker Name of Applicant (print or type)	**Vice President** Title (if applicable)
Signature of Preparer (if different than above)	2-25-2021 Date
George Drew Name of Preparer (print or type)	**Regional Environmental Director** Title (if applicable)

☒ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, consultants, etc.).

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I certify that I will comply with all notice requirements as listed in Section 22a-6g of the General Statutes."

Signature of Applicant	Date
Name of Applicant (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	2/19/2021 Date
Jeffery Pope Name of Preparer (print or type)	**Professional Engineer** Title (if applicable)

☒ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, consultants, etc.).

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I certify that I will comply with all notice requirements as listed in Section 22a-6g of the General Statutes."

Signature of Applicant	Date
Name of Applicant (print or type)	Title (if applicable)
Rachel M Rosen	02/26/2021
Signature of Preparer (if different than above)	Date
Rachel Rosen	**Department Manager - Environmental**
Name of Preparer (print or type)	Title (if applicable)

☒ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, consultants, etc.).

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CUT SHEETS

PART V.2b.(vi) - PROCESSING EQUIPMENT

Cut sheets provided for representative equipment and systems.
Actual equipment and systems will be selected following detailed design.

QUOTATION

Ring Power Lift Trucks

PREPARED FOR	
Customer:	COVANTA LAKE II INC
Address:	3830 ROGERS IND PK RD
	OKAHUMPKA, FL 34762-3205

REFERENCE	
Effective From:	Wednesday, July 24, 2019
Effective To:	Friday, August 23, 2019
Quote #:	442645 Rev#2
Account Manager:	Andy Sanders
Direct Phone:	(407) 412-1174
E-mail:	andy.sanders@ringpower.com

MITSUBISHI FORKLIFT TRUCKS

FD25N5 - 5,000 lb. Capacity Tier 4 Final Compliant Diesel Pneumatic Tire Forklift

HIGHLIGHTS

Productivity
- 4EG 3.3L 4 Cylinder Engine
EPA Tier 4 Final Emission Compliant Fuel System
U.L. Approved Model
Single Speed Powershift Automatic Transmission
Transmission Oil Cooler
Transmission Return to Neutral for Start

Reliability
Engine Protection System:
- Engine Coolant Temperature Warning & Cutback
- Transmission Oil Temperature Warning & Cutback
- Engine Oil Pressure Warning & Cutback
- Brake Fluid Level Warning
- Periodic Maintenance Alerts & Display Indicator
Isolated (Rubber mounted) Key Components:
- Hydraulic Control Valves
- Transmission
- Engine
- Radiator
- Exhaust System
- Secondary Lift Cylinders on Mast
Hydrostatic Power Steering
Separate Brake and Inching Pedals
Cyclone Air Filter
High Position Air Intake
Maintenance Free Battery
Anti Restart Ignition Key Switch
Fully Insulated Steel Engine Hood
500 Hour Service Intervals

Operator Comfort
Tilt Steering Column with Mechanical Quick Return
Elongated Grab Bar
Open Step with Anti Slip Plate
Electronic Direction Control

Operator Protection

Premium LCD/LED Display including:

- Combination Hour Meter & On Board Diagnostic Display
- Speedometer and Clock Display
- Travel Direction Indicator
- Low Fuel Indicator (LPG Fuel System only)
  or Fuel Gage (Gasoline Fuel System Only)
- Engine Coolant Temperature Gauge
- Alternator (Battery Charging Status) Warning
- Diagnostic Warning
- Operator Passcode Functionality (Optional Activation)
- Other systems-related indicators & warnings

Added Operator Protection

Integrated Presence System (IPS)

- Transmission to Neutral & Display Indicator
- Mast & Auxiliary Hydraulic Lockout & Display Indicator
- **Parking Brake Warning & Display Indicator**
- Seat Belt Reminder Warning & Display Indicator

Dual Action Parking Brake Handle

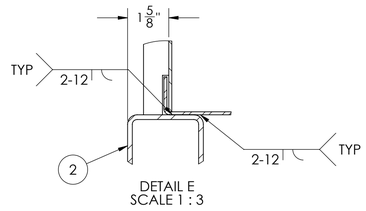
KEY FEATURES & BENEFITS	
OPTIMAL PERFORMANCE	Engine provides reliable performance in even the toughest conditions. They are engineered to produce minimal noise and emissions. The engine protection system (EPS) also monitors the entire system to ensure maximum production.
OPERATOR COMFORT	The operator compartment is designed with the comfort of the operator in mind. From the standard comfort seat to the numerous features built in for noise and vibration reduction, the lift truck is made to allow the operator to perform at high levels for the entire shift without unnecessary fatigue or discomfort.
INTEGRATED PRESENCE SYSTEM	The IPS ensures that the operator is operating the forklift how it is supposed to be. Full transmission and hydraulic function lockout, accompanied by audible alarms, make sure that potential risks in operating the forklifts are kept to a minimum.
SERVICEABILITY	With 500 hour service intervals and the most reliable dealer network in the industry, this forklift truck can be counted on to stay running with minimal maintenance. Whenever it finally is time to repair or maintain the truck, access to the major components is extremely easy and can be achieved without tools.
PREMIUM LED/LCD DISPLAY	The standard premium display allows the operator to keep all of the systems of the forklift in check. If there is anything wrong, the operator is notified through one of the many icons that monitor truck performance. This can help prevent more damage to the truck excessive downtime.

CONFIGURATION		
CHASSIS	1	5,000 lb. Capacity Tier 4 Final Compliant Diesel Pneumatic Tire Forklift
RATINGS & STANDARDS	1	EPA Compliant
MAST	1	188.0" MFH / 84.5" OAL / 36.0" FFH Triplex
POWERTRAIN	1	Mitsubishi 4EG 3.3L 4 Cylinder Diesel Engine
POWERTRAIN	1	Single Speed Powershift Transmission
CARRIAGE	1	39.5" Wide ITA Class II Hook Type Carriage
DRIVE & STEER TIRES	1	Solid Pneumatic Single Drive And Steer Tires
LOAD BACKREST	1	48" High Load Backrest
HYDRAULIC ACTIVATION	1	4-Section Valve With Cowl Mounted Levers
HYDRAULIC HOSING OPTIONS	1	Dual Function Internal Hosing - Triplex Mast
HYDRAULIC SYSTEM OPTIONS	1	Load Bearing Clamp Lockout
TILT CYLINDERS	1	Standard Tilt Cylinders
OVERHEAD GUARD	1	HARRIS STOPLER CAB WITH A/C The AC adds about 12-13" to overall height of the truck.

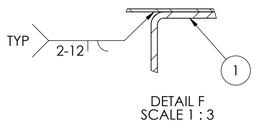
FD25N5 - 5,000 lb. Capacity Tier 4 Final Compliant Diesel Pneumatic Tire Forklift

PRODUCTIVITY OPTIONS	1	Premium LCD/LED Display
PRODUCTIVITY OPTIONS	1	Engine Protection System
PRODUCTIVITY OPTIONS	1	Separate Brake & Inching Pedals
PRODUCTIVITY OPTIONS	1	Rear Grab Handle With Horn Button
PRODUCTIVITY OPTIONS	1	Steering Wheel Knob
SPECIAL APPLICATIONS OPTIONS	1	Integrated Presence System
SPECIAL APPLICATIONS OPTIONS	1	Underbelly Screen
SPECIAL APPLICATIONS OPTIONS	1	Radiator Screen
SPECIAL APPLICATIONS OPTIONS	1	High Pass Through, Square Fin Radiator
SPECIAL APPLICATIONS OPTIONS	1	Heavy Duty Counterweight Grill
WARNING / LIGHT OPTIONS	1	Two Forward LED Working Lights On OHG
WARNING / LIGHT OPTIONS	1	Electronic Back-up Alarm
WARNING / LIGHT OPTIONS	1	Amber Strobe Light - Mounted Below OHG
SEAT	1	Comfort (Non-Suspension) Vinyl Seat
ACCESSORIES	1	Orange Seat Belt
ACCESSORIES	1	Fire Extinguisher - Mounted To OHG Leg
LANGUAGE MARKINGS	1	English Language Markings North/South America
ATTACHMENT	1	Rotating Fork Clamp

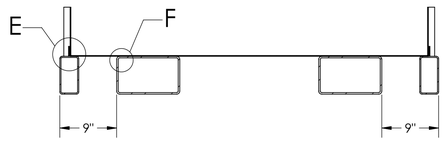
ITEM	QTY.	DESCRIPTION	LENGTH	WIDTH	MATERIAL	PART NUMBER	WGT./EA.
1	2	HSS, REC, 10 X 6 X 1/4	60		ASTM A500	14708-0000	129.3
2	2	HSS, REC, 6 X 3 X 3/16	60		ASTM A500	14448-0000	53.6
3	4	CHANNEL, C6 @ 10.5#/FT	5.875		ASTM A36	7090-0000	5.1
4	2	CHANNEL, C6 @ 10.5#/FT	21.875		ASTM A36	7090-0000	19.2
5	12	CHANNEL, VERT STIFFNER				J17321-0578	14.1
6	1	CHANNEL, 3 @ 4.1#/FT	59.125		ASTM A36	3767-0000	20.2
7	2	BIN, COPED CHANNEL				J17321-0575	19
8	4	SHEET, 14 GA	5.875	2.875	ASTM A36	7794-0000	0.4
9	2	HSS,REC, 3 X 1 1/2 X 3/16	75.188		ASTM A500	7818-0001	31.1
10	2	SHEET, 14 GA	2.875	1.375	ASTM A36	7794-0000	0.1
11	1	SHEET, SIDE, BIN, 4 SIDED				J17321-0579	432.3
12	1	SHEET, BASE, BIN, 4 SIDED				J17321-0582	118.2

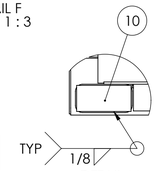


DETAIL E
SCALE 1 : 3

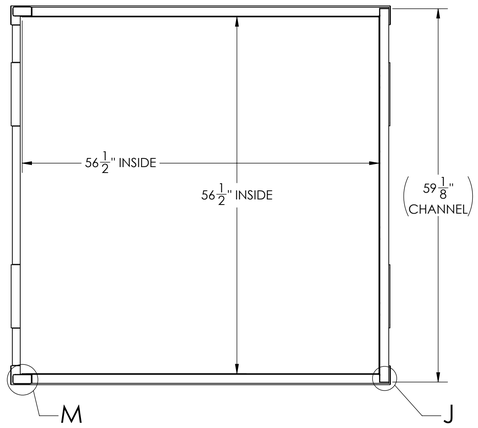


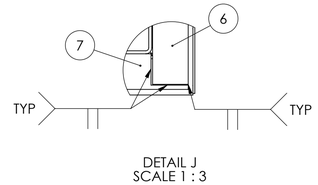
DETAIL F
SCALE 1 : 3



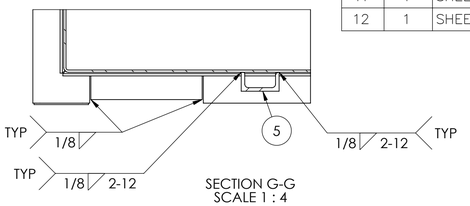


DETAIL M
SCALE 1 : 4



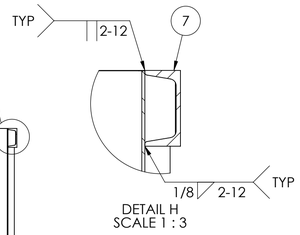


DETAIL J
SCALE 1 : 3



SECTION G-G
SCALE 1 : 4

SECTION D-D



DETAIL H
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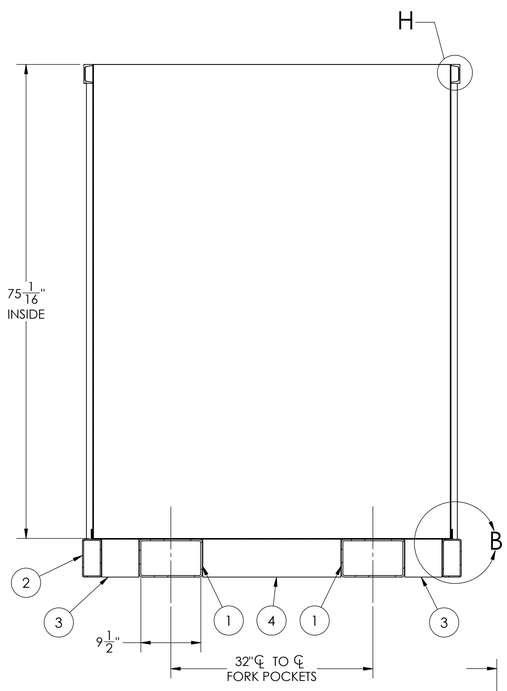
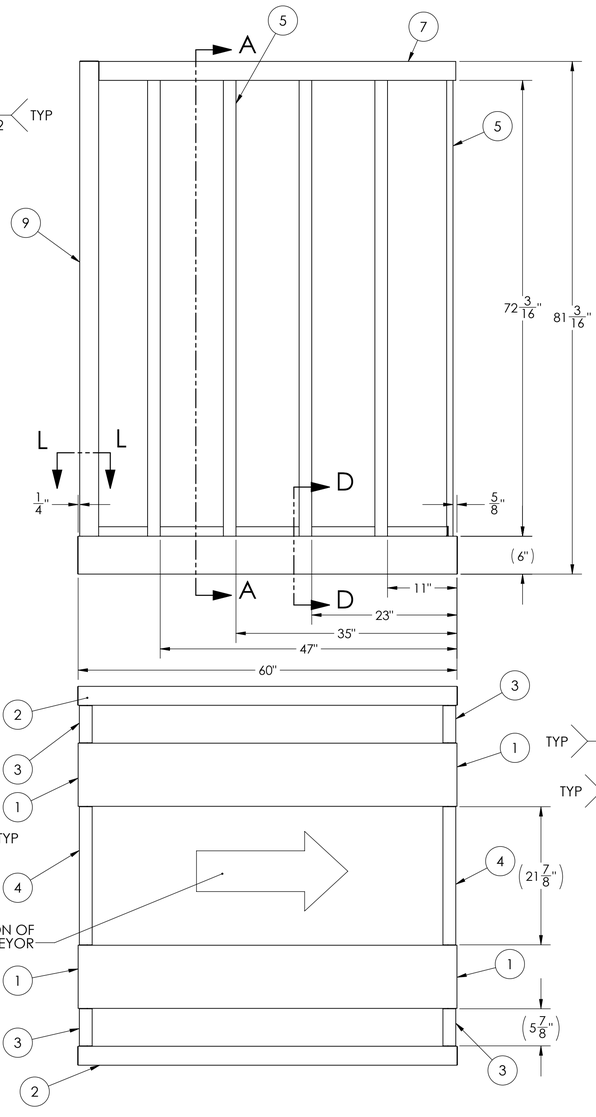
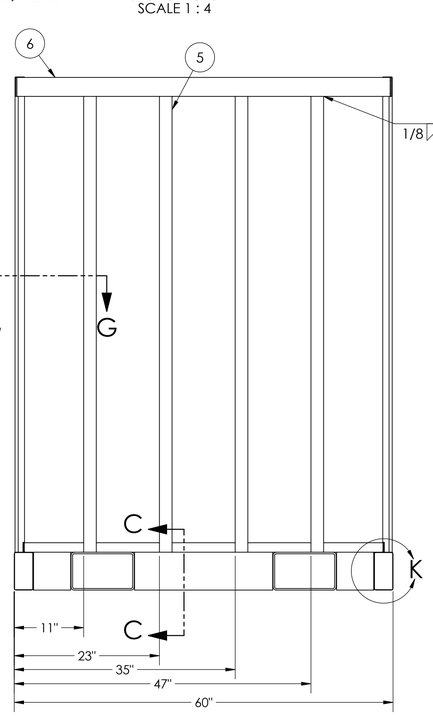
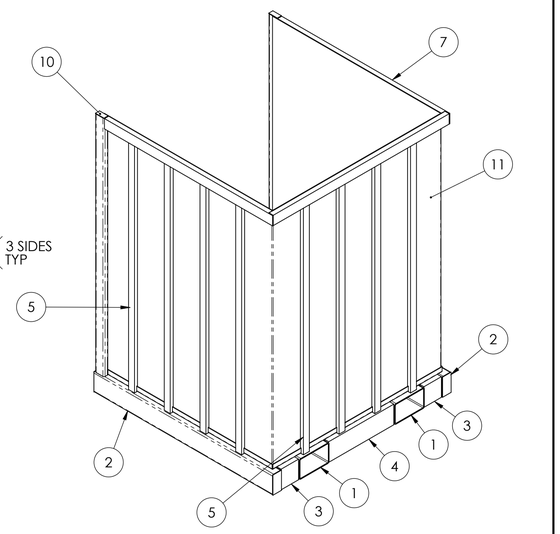
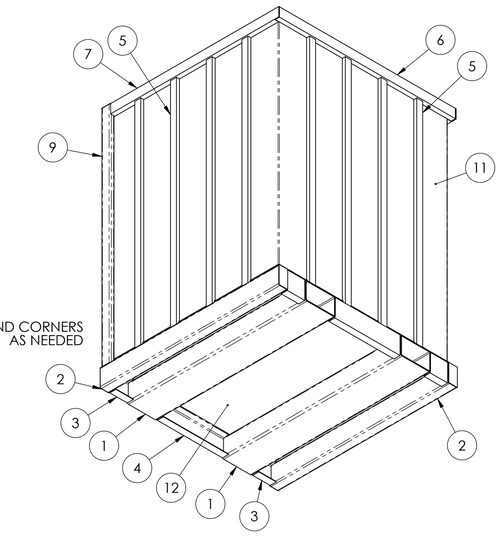


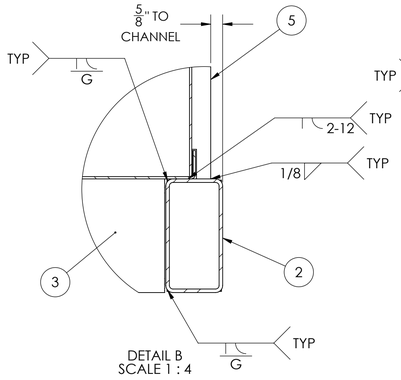




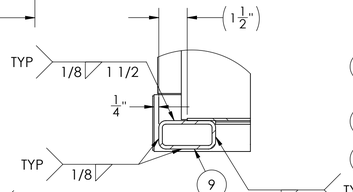




SECTION A-A

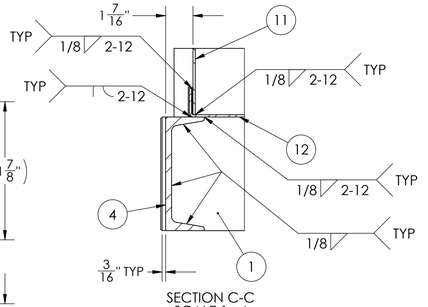


DETAIL B
SCALE 1 : 4

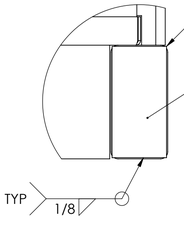


SECTION L-L
SCALE 1 : 4

PRIMARY DIRECTION OF
TRAVEL ON CONVEYOR



SECTION C-C
SCALE 1 : 4



DETAIL K
SCALE 1 : 4

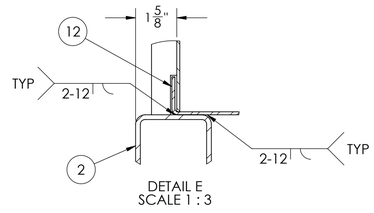
UNLESS OTHERWISE INDICATED : ALL DIMENSIONS ARE IN INCHES.
TOLERANCES FRACTIONAL ±1/16
DECIMAL .XX ±.03
.XXX ±.015
ANGULAR ±1°
MACH. SURFACE FINISH 250
DO NOT SCALE DRAWING!

PFLOW INDUSTRIES, INC. 414-352-9000
6720 NORTH TEUTONIA AVE. 414-352-9002 FAX
MILWAUKEE, WI 53209 info@pflow.com

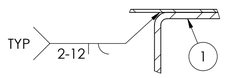
TITLE: BIN, 3-SIDED

ESTIMATED WEIGHT (LBS)	1267.1	DATE	05-03-2017	SCALE	1:12	DRAWING NUMBER	J17321-0574	SHT 1 OF 1	REV -
REF.		DRAWN	SJD	CHECKED					

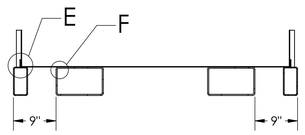
ITEM	QTY.	DESCRIPTION	LENGTH	WIDTH	MATERIAL	PART NUMBER	WGT./EA.
1	2	HSS, REC, 10 X 6 X 1/4	60		ASTM A500	14708-0000	129.3
2	2	HSS, REC, 6 X 3 X 3/16	60		ASTM A500	14448-0000	53.6
3	4	CHANNEL, C6 @ 10.5#/FT	5.875		ASTM A36	7090-0000	5.1
4	2	CHANNEL, C6 @ 10.5#/FT	21.875		ASTM A36	7090-0000	19.2
5	16	CHANNEL, VERT STIFFNER				J17321-0578	14.1
6	2	CHANNEL, 3 @ 4.1#/FT	59.125		ASTM A36	3767-0000	20.2
7	2	BIN, COPED CHANNEL				J17321-0571	19.8
8	4	SHEET, 14 GA	5.875	2.875	ASTM A36	7794-0000	0.4
9	2	ANGLE, 1.5 X 1.5 X 1/8	62.25		ASTM A36	3754-0000	6.4
10	2	BIN, COPED ANGLE				J17321-0599	6.2
11	2	SHEET, SIDE, BIN, 4 SIDED				J17321-0576	291.2
12	1	SHEET, BASE, BIN, 4 SIDED				J17321-0577	120.9



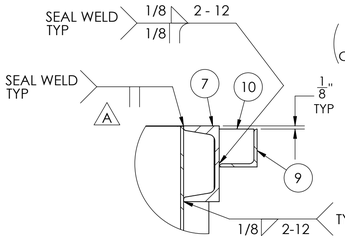
DETAIL E
SCALE 1 : 3



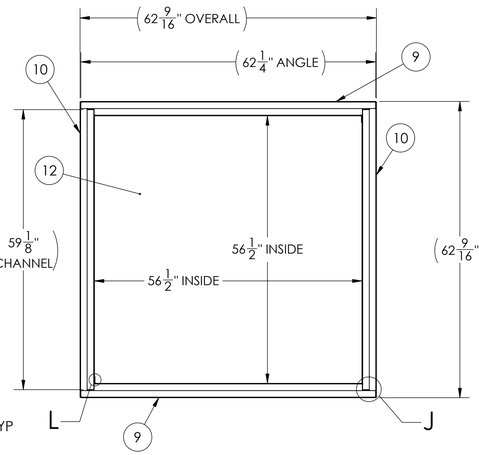
DETAIL F
SCALE 1 : 3

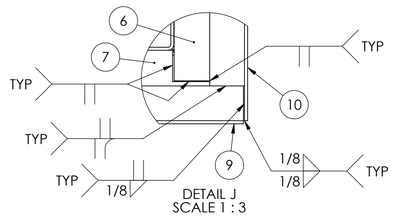


SECTION D-D

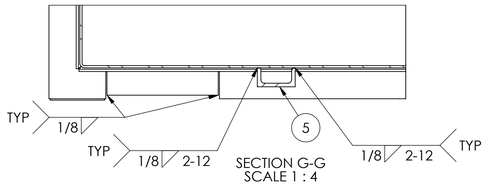


DETAIL H
SCALE 1 : 3

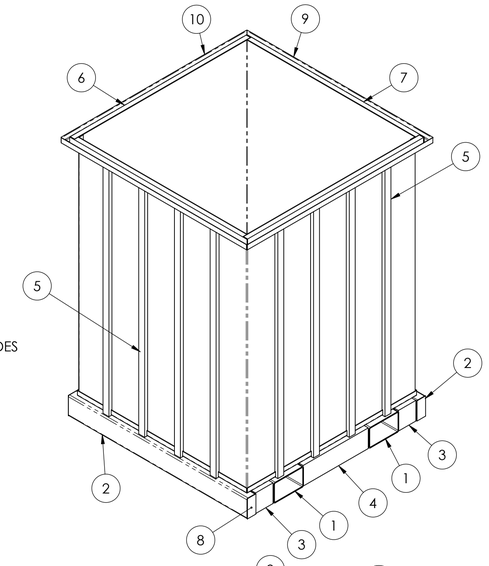


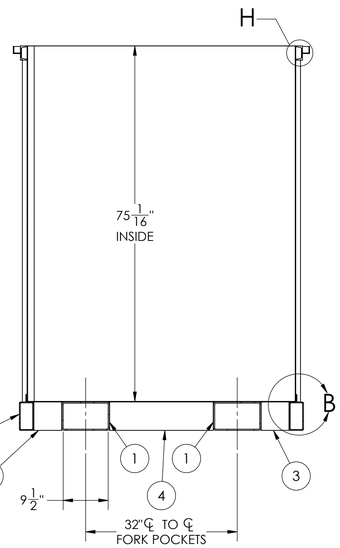


DETAIL J
SCALE 1 : 3

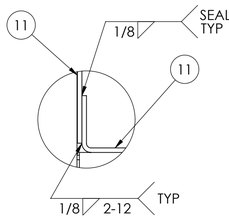


SECTION G-G
SCALE 1 : 4

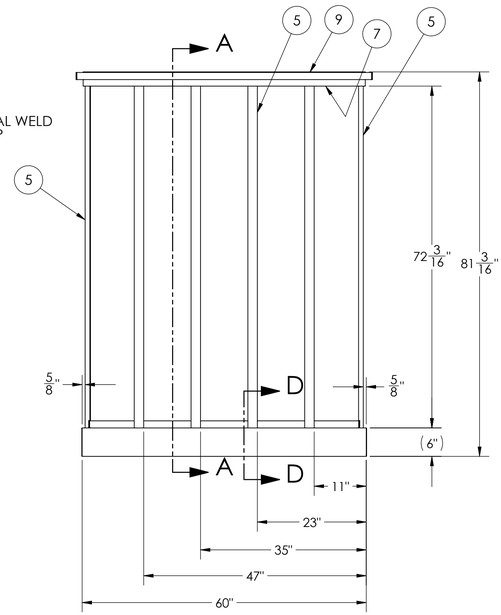


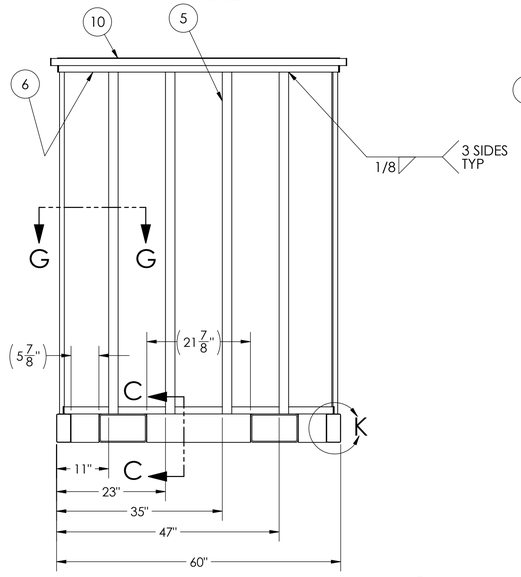


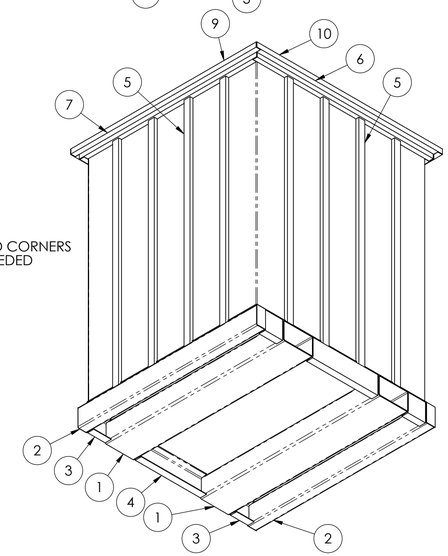
SECTION A-A

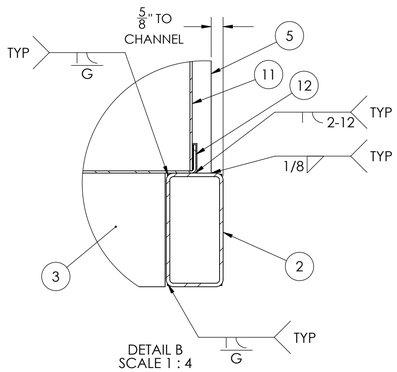


DETAIL L
SCALE 1 : 2

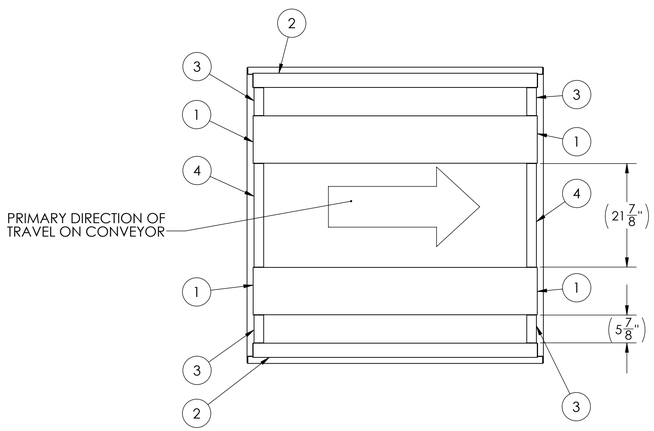


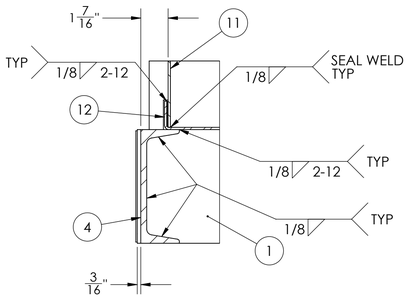




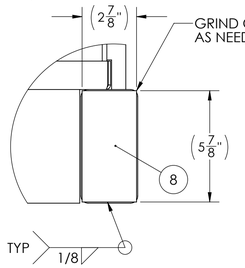


DETAIL B
SCALE 1 : 4





SECTION C-C
SCALE 1 : 4



DETAIL K
SCALE 1 : 4

DESCRIPTION	REV.	DATE	BY
UPDATED WELD NOTE TO SEAL WELD	A	12/12/2017	MJR
JOB REVISIONS			

UNLESS OTHERWISE INDICATED : ALL DIMENSIONS ARE IN INCHES.
TOLERANCES FRACTIONAL ±1/16
DECIMAL .XX ±.03
.XXX ±.015
ANGULAR : ±1°
MACH. SURFACE FINISH : 125
DO NOT SCALE DRAWING!

PFLOW INDUSTRIES, INC. 414-352-9000
6720 NORTH TEUTONIA AVE. 414-352-9002 FAX
MILWAUKEE, WI 53209 info@pflow.com

TITLE: BIN, 4-SIDED

ESTIMATED WEIGHT (LBS)	DATE	SCALE	DRAWING NUMBER	SHT	REV
1461	05-03-2017	1:16	J17321-0570	1 OF 1	A
REF. J17007-0570	DRAWN SJD	CHECKED			

PFLOW INDUSTRIES

Leading Innovator of Vertical Solutions

Unique product features that deliver efficiency, performance and safety.

Leading the Industry, Now and Always

PFlow pioneered the vertical reciprocating conveyor industry in 1977. We've never looked back. Every day, we're innovating products that lift success.

Our engineering team – by far the largest in the market – will solve any vertical lifting challenge. From aeronautics to automotive, petrochemical to printing, PFlow creates solutions for every industry.

Each project is unique. That's why, at PFlow, innovation never ends. Others copy us. They'll never catch us.

Best Lifecycle Costs: PFlow uses heavier-gauge steel, larger shafts, stronger bearings and industrial-grade motors in its vertical lifting systems. The results? Greater durability, less maintenance, and the lowest lifecycle costs.

Singular Focus: PFlow created the vertical reciprocating conveyor (VRC) industry. Our sole focus is lifting products. All of PFlow's research, development and design centers around manufacturing the strongest, safest, most reliable VRCs on the market.

Strength in Numbers: PFlow has manufactured and sold over 18,000 VRCs, more than double its combined competitors. Customers recognize quality. PFlow delivers it.

Custom Design: All PFlow products are custom designed and built to exact specifications – no "one size fits all" here. Dimensions and capacities match customers' unique needs. Applications are engineered to order.

Superior Safety: Safety is built into every element of a PFlow lifting system. All products are built 3-to-1 over yield on structure, and all lifting components exceed industry design standards. The patented DeckLock system increases safety during load handling and unloading. The DeckLock Systems also protects materials and equipment. Unparalleled design, coupled with stronger components, builds superior safety into all PFlow VRCs.

Largest Product Selection: PFlow offers the greatest variety of VRCs on the market, all with greater capacities, faster speeds and longer lifespans than competitors' products. Every PFlow VRC is custom built to match the customer's exact specifications and needs.

Unmatched Installation Capability: PFlow offers complete installation service for all its products, or assistance with the installation process. PFlow can help customers find certified local installers, many of whom were trained by PFlow, through its long-term relationships with distributors.

Spectacular Service: The dedicated, highly-trained service team at PFlow has more than 75 years combined experience – far and away, the most in the VRC industry! You're never on your own, whether for product installation, on-site troubleshooting, shipping parts overnight, or any other need.

Hands-On Product Training: PFlow offers on-site training for customers in operation and maintenance of its products. Educated employees are critical to safe and efficient use of VRCs.

Low-Risk Code Compliance: PFlow helped shape safety and regulatory codes governing the VRC industry, and guarantees that its products meet all federal, state and local requirements. PFlow is the only VRC manufacturer with a full-time code specialist on staff, who continuously monitors legislation and compliance, and is available for on-site consultation with customers.

Engineering Expertise: The expert, award-winning engineering team at PFlow has hundreds of years of VRC industry experience, far exceeding any competitor. Its collective expertise and know-how ensures that cost-effective solutions can be found for any challenge, no matter how complicated.

Fast Order Processing: PFlow's emphasis on lean manufacturing means that, when customers place an order, their product is delivered expediently – custom built, and ready to perform.

Global Footprint: PFlow has installed VRCs in five of the world's seven continents. Wherever you are, PFlow will provide vertical lifting solutions that meet your material handling needs.

Persistent Problem-Solving: Everyone at PFlow is completely dedicated to the design, manufacture and servicing of VRCs. They've overcome the toughest challenges. No problem is too large, or too hard, to solve. As a PFlow customer, this team is on your side.

We don't "make sales." We create solutions.

Meet the team working for you.

For more than four decades, everyone at PFlow has focused solely on serving customers. Their continuous dedication to innovation – and your success – is unmatched.

Industry-Leading Service and Product Support

PFlow's unparalleled service and product support mean that you're never on your own.

From pre-installation planning, to installation, or trouble shooting, we're here for you. Service begins immediately, and never ends. Our experienced, professional team is always ready to help.

Unlike some competitors, we embrace the concept of "service after the sale." Why? Because, to us, you're a customer - not a "sale." It's a distinction we never forget.

PFlow takes tremendous pride in our products' performance and durability. Our service team is committed to providing the best customer support anywhere – no questions asked.

With lifts operating in five of the world's seven continents, our highly-trained technicians are available for consultation 24/7.

Contact the PFlow service team for assistance with:

- Installation Supervision
- Start-up
- Maintenance Training
- Operator Training
- Maintenance Contracts
- Safety Inspections
- Code Compliance Inspections

Our web site (www.pflow.com) contains a wealth of easily-accessible resources: owners manuals, installation manuals, CAD drawings, dimensions and data, CSI specifications, comprehensive AIA (American Institute of Architects) specifications, and more.

Our people make the big difference. For troubleshooting, field training or any other needs, the PFlow service and support team stands ready. You'll work with people who know how to help and, as importantly, want to help – because, above all, we value our relationship with you.

PFlow leads, collaborates, and stays current on industry trends though various associations. PFlow and its employees are members of APICS, ASQ, ASME, AWS, CSS, MHIA, MHI, NAEC, NFIB, NSPE, SME, and TEC.

PFlow Sales School

State-of-the-Art PFlow Showroom

OVER 40 YEARS

CUSTOM VRC INSTALLATIONS

Movable Platform – Custom 4-Post VRC
Includes a retractable lower aluminum ramp and power roll-up doors. 3500 lbs. capacity.

Moving Floor System – Custom Design
390’ x 25’ moving-floor, weighs in at just under one million lbs. and uses a string of wheeled carts, with a working surface of steel plates. 20,000 lbs. point loads; 4’ per minute horizontal travel speed.

Mirror Lift System – 6-Post Mechanical VRC
Winner of 2016 Governor’s New Product Award.
161,000 lbs. lifting capacity; 78’ lift travel; 4 levels of service; 10’ per minute travel speed.

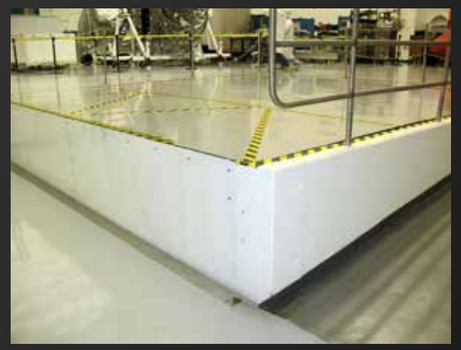
Stadium Concourse Lift – F Series Mechanical VRC
12’ high clearance for the University of Texas Longhorns; 12,000 lbs. lifting capacity; fully ascends/descends in 30 seconds.

Missile Work Platform – Custom Screw Lift
Vertical travel is controlled via screw lifts. Travels laterally on 18” wheels. 6,500 lbs. lifting capacity.

University Research – High-Capacity Lift – Custom 4-Post VRC
This precise vertical and circular motion lift is installed in a scientific accelerator facility for nuclear science. 26,000 lbs. lifting capacity; 19’ lift travel; 5’ per minute travel speed.

Aeronautics Lift – M Series Mechanical VRC
Moves materials to assist with the production of airplanes. 5,000 lbs. lifting capacity; 18’ 7” lift travel; 3 levels of service; 27’ per minute travel speed.

Boat Mold Lift – F Series Mechanical VRC
Retrofitted design doubled storage space for fiberglass mold dollies in lamination production area. 5,000 lbs. lifting capacity.



Screw Lift – Custom Platform
Rectangular 18.5’ x 20’ platform provides absolute stability needed to move satellites. 80,000 lbs. lifting capacity; 3’ per minute travel speed.

Winery Lift – F Series Mechanical VRC
This through-floor application is in service year-round, and in constant use 12-14 hours each day. 20,000 lbs. lifting capacity; 26’ lift travel; 3 levels of service.

Robotic Parking System – High-Speed Vertical Lifts
7-level, high-speed vertical parking garage stores 325 cars. Programmable controls ensure uninterrupted operation. Lifts send and retrieve automobiles at a rate of 400 FPM.

Fuel Cell Energy Material Lifts – F Series Mechanical VRC
Combination of two material lifts. The first is a screw lift mechanism. The second is a material lift that traverses sideways and lowers onto the first lift. 5,000 lbs. lifting capacity; 18’ lift travel; 3 levels of service; 17’ per minute travel speed.

OVER 40 YEARS

VRC INDUSTRY SOLUTIONS

Aeronautics & Aerospace
Automotive
Car Dealership Parts Rooms
Chemical Manufacturing
Computer & Electronics
Distribution Centers
Food & Beverage
Government
Hospitals
Manufacturing
Material Handling & Processing
Military & Defense Industry
Packaging & Converting
Petrochemical
Pharmaceutical
Printing
Pulp & Paper (Roll Handling)
Retail Back Rooms
Schools & Municipalities
Telecommunications

PFLOW INDUSTRIES

Telescope Lift – Custom Designed 4-Post VRC
19' x 19' lift carriage and dual motor drive transport the telescope's delicate mirror. 54,000 lbs. lifting capacity (44,000 lb. mirror/10,000 lb. carriage); 76' lift travel; 5' per minute travel speed.

Distribution Center Material Lifts – F Series Mechanical VRC
Global logistics distribution center relies heavily on 20 high-capacity VRCs with state-of-the-art sorting capabilities. 15,000 lbs. lifting capacity per lift.

9-Ton Window Operators – Special Application
Two windows in private Florida residence split like freight elevator doors, and can be completely hidden in the walls. 33' wide x 22' high.

Beer Keg Lift – M Series Mechanical Cantilever VRC
These four lifts assist in the movement of 1,600 kegs throughout an NFL game. 40' per minute travel speed.

Telecommunications Lift – High-Capacity VRC
Designed to move 20' shipping containers into a secure underground facility. 50,000 lbs. lifting capacity; 40' lift travel.

Home Appliance Lifts – M Series Mechanical VRC
Ten lifts installed as a mezzanine application, including a conveyorized system. 1,200 lbs. lifting capacity; 200' per minute travel speed.

Waste Incinerator Lift – F Series Mechanical VRC
Lift moves contraband materials seized by law enforcement authorities from the ground level to an elevated incinerator. 15,000 lbs. lifting capacity; 79' lift travel; 37' per minute travel speed.

Naval Shipyard Drydock – F Series Mechanical VRC
High-capacity lift moves materials and equipment used to build, repair and modernize the Navy's largest ships. 30,000 lbs. lifting capacity; 50' lift travel; 30' per minute travel speed.

Motorcycle Lift – 21 Series Hydraulic VRC
Transports motorcycles and parts between service and storage levels. 2,000 lbs. lifting capacity.

Mini Dealership Lift – F Series Mechanical VRC
Shaftway application uses 14' x 20' carriage to move vehicles. 10,000 lbs. lifting capacity.

Public Utility High-Capacity Lift – F Series Mechanical VRC
Mezzanine application services a hydroelectric dam for moving components and parts. 20,000 lbs. lifting capacity; 40' lift travel.

Auto Dealership High Rise Lift – F Series Mechanical VRC
High-capacity lift moves luxury automobiles to storage and service levels. 8,000 lbs. lifting capacity; 73' lift travel; 6 levels of service.

OVER 40 YEARS

LIFTING SOLUTIONS | INTERIOR, EXTERIOR, ABOVE & BELOW GROUND

PFLOW INDUSTRIES

1

M SERIES MECHANICAL VRC

A robust, versatile lift ideal for high-capacity, high-cycle applications between two or more levels. Accommodates indoor and outdoor environments.

2

FULLY AUTOMATED LIFT SYSTEM

PFlow's fully-automated lifting system can handle loads in a high-throughput operation. Using programmable controls (PLCs), it accommodates multiple traffic flow patterns and different vertical levels.

3

MOVING FLOOR ASSEMBLY LINE

Custom moving floor systems are used in numerous manufacturing processes. PFlow's fully-integrated lifts increase productivity, improve safety and lower facility work costs.

Compared to typical assembly line systems using slat conveyors:

- Lower cost
- Lower maintenance
- Higher reliability
- Heavier overall load capacity
- Higher point load capacity
- Customized to specific application

4

D SERIES HYDRAULIC VRC

This entry-level, hydraulic 2-level low-maintenance lift is ideal for mezzanine and balcony applications up to 15'. It's the low-cost way to move lighter pallet loads!

5

B SERIES BOX LIFT

Pre-wired modular lift designed to move small loads between floors. Hand loaded on each level at an ergonomic height.

8

F SERIES MECHANICAL VRC

The ultimate VRC is designed with four guide columns to support large carriage sizes and heavy-duty loads. With flexible load configurations and added safety features, materials securely travel between two or more levels. Known as the "Hercules of VRCs!"

7

SCREW LIFTS

A specialized lifting solution for applications that require high levels of precision, accuracy and stability. Used in advanced manufacturing and high-performance areas.

6

21 SERIES HYDRAULIC VRC

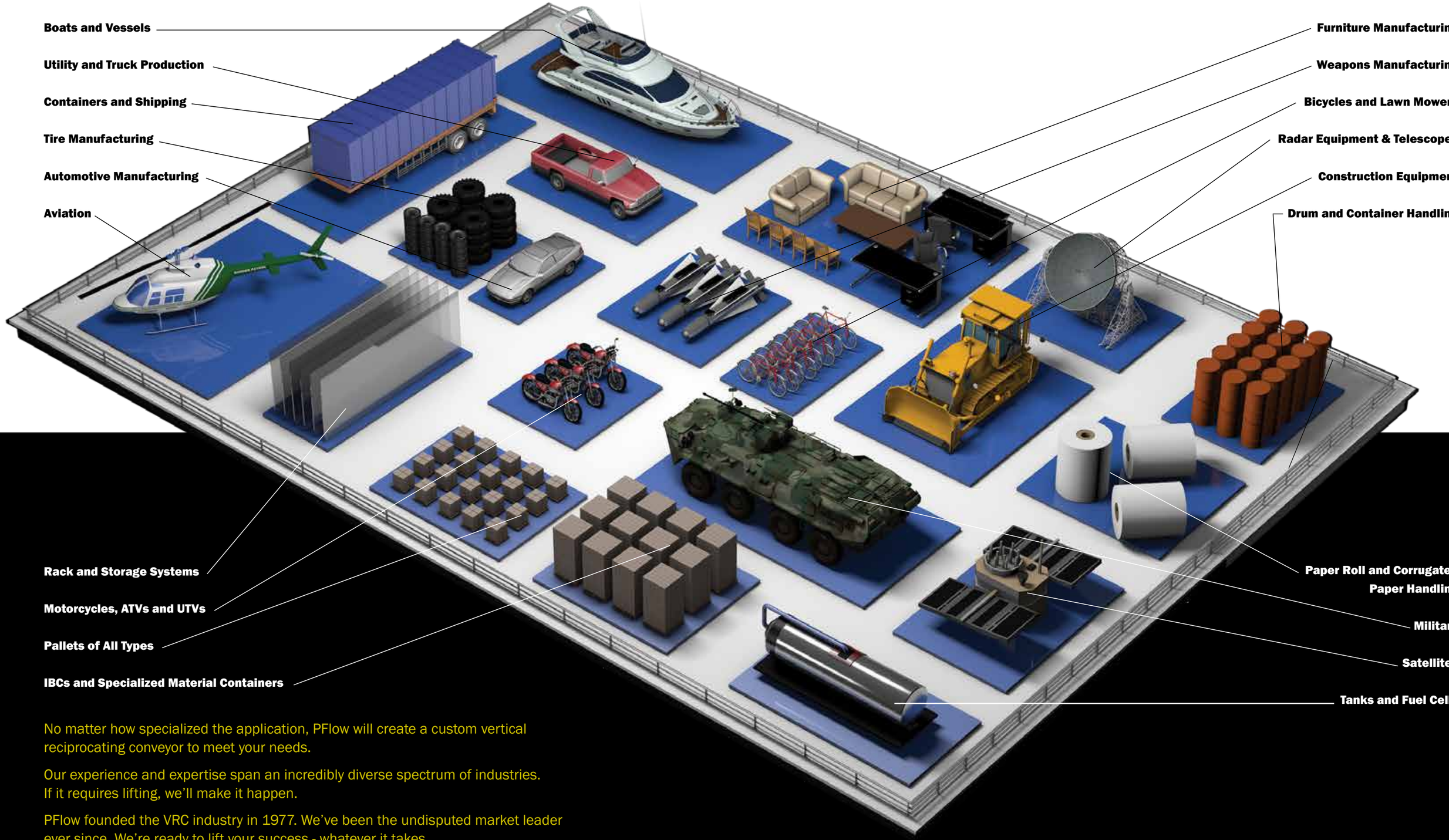
Boasts higher vertical travel up to 22', capacities to 8,000 lbs. and larger carriage sizes! The 21 offers the PFlow patented torsion bar for level carriage movement.

PFLOW LIFT CAPABILITY STANDARDS

	Mechanical	Hydraulic
Lift Capacity	Up to 50,000 lbs. or more	Up to 8,000 lbs.
Vertical Travel	Up to 200' and more	Up to 22'
Travel Speed	Up to 400 FPM	Up to 24 FPM
Carriage Size	3' x 3' and up	Up to 12' x 10'
Automated Capabilities	Yes	No

PFLOW can design and build custom lifts up to 300,000 lbs. lift capacity.

UNIQUE VRC APPLICATIONS



No matter how specialized the application, PFlow will create a custom vertical reciprocating conveyor to meet your needs.

Our experience and expertise span an incredibly diverse spectrum of industries. If it requires lifting, we'll make it happen.

PFlow founded the VRC industry in 1977. We've been the undisputed market leader ever since. We're ready to lift your success - whatever it takes.

M SERIES | 2-POST MECHANICAL LIFT

Transports large, heavy loads between two or more levels.

Ideal for high-speed or high-cycle automated systems.

- Lifts loads up to 10,000 lbs. Carriage size 12’ x 12’ standard. Customization available for larger sizes.
- Vertical rise to 200’ or more. Standard travel speed is 25-30 FPM.
- Straddle or cantilever.
- Indoor or outdoor use.

- Lifetime structural warranty.
- ASME B20.1 compliant.
- Superior strength, reliability and long-term performance.
- Carriage is lifted and lowered by heavy-duty roller chain using a shaft-mounted gear reducer and motor, mounted atop 6” guide columns.
- Advanced built-in safety features protect workers and materials.
- Certified safety cams prevent carriage descent in the event of a chain failure.

- DeckLock Safety System available for added security at critical upper levels.
- Optional hot-dipped galvanized or epoxy finish available for outdoor or wash-down environments.
- Explosion-proof components available for classified environments.

GENERAL
Principal components of the M Series are guide columns, carriage and a motor-gear reducer drive.

STRUCTURE
Guide columns are 6” wide flange sections. Carriage is fabricated with heavy structural steel members and a steel deck plate. Other deck surfaces can be supplied. Straddle or cantilever carriage available, depending on application.

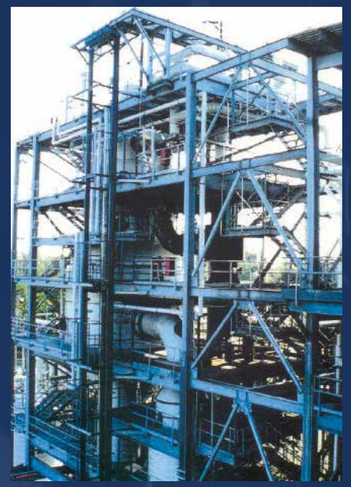
OPERATION
Carriage is lifted and lowered by roller chain attached to an electric motor/reducer assembly mounted on the guide columns. Standard units employ 2 HP to 15 HP TEFC brake motors.

ELECTRICAL
Standard power requirements are 230/460VAC, 3-phase. Control voltage is 110VAC. Standard control panels and push button stations are NEMA 12 rated. Push button stations provided at each level include momentary contact, call/send operators and mushroom head emergency stop.

SAFETY FEATURES
Travel of the carriage is controlled by a limit switch. When the switch is tripped or power is lost, the motor shuts off and the mechanically actuated brake is engaged. Overload protection is provided by a relay that measures the motor current. If the current exceeds the amount required to move the maximum load, it will shut the unit down and engage the brake. Chain sensors shut down the lift if chain tension is lost. Chain tensioners and guides prevent chains from jumping on sprockets. NO RIDER signs posted at each point of operation.

CARRIAGE SIDE GUARDS
Carriage is equipped with safety rails on non-operating sides, and a safety chain, drop bars or gates on operating ends. Optional expanded metal or sheet metal carriage side guards available.

SAFETY ENCLOSURES / GATES
Safety codes (ASME B20.1) require interlocked gates with enclosures on all sides of the lift. Enclosures must be a minimum of 8’ high and reject a ball 2” in diameter. See page 23 for additional information.



OVER 40 YEARS

F SERIES | 4-POST MECHANICAL LIFT

Transports multiple pallets, oversized materials, large carts or heavy machinery between two or more levels. Ideal for high-speed, high-cycle or automated systems.

- Lifts loads up to 50,000 lbs. Customization available for heavier loads.
- Unlimited carriage sizes.
- Unlimited vertical rise.
- Standard travel speed is 20 FPM.
- Indoor or outdoor use.
- Lifetime structural warranty.
- ASME B20.1 compliant.
- Carriage is lifted and lowered by heavy-duty roller chain attached to mechanical lifting mechanism, mounted atop guide columns. Guide columns vary from 6” to 12”.
- Four-post design allows loading and unloading from all sides with flexible traffic patterns.
- Advanced built-in safety features protect workers and materials.
- Certified safety cams prevent carriage descent in the event of a chain failure.
- DeckLock Safety System available for added security at critical upper levels.
- Optional hot-dipped galvanized or epoxy finish available for outdoor or wash-down environments.
- Explosion-proof components available for classified environments.

GENERAL
Principal components of the F Series are guide columns, carriage and a mechanical lifting mechanism.

STRUCTURE
Guide columns are built from wide-flange beams. Carriage is fabricated of heavy-duty structural steel members and deck plate. Other deck surfaces available.

OPERATION
Carriage is lifted and lowered by roller chain attached to an electric motor-reducer assembly mounted on the guide columns. Standard units employ 2 HP to 15 HP TEFC brake motors.

ELECTRICAL
Standard power requirements are 230/460VAC, 3-phase. Control voltage is 110VAC. Standard control panels and push button stations are NEMA 12 rated. Push button stations provided at each level include momentary contact, call/send operators and mushroom head emergency stop.

SAFETY FEATURES
Travel of the carriage is controlled by a limit switch. When switch is tripped or power is lost, the motor shuts off and the mechanically actuated brake engages. Overload protection provided by a relay that measures motor current. If the current exceeds the amount required to move the maximum load, it will shut the unit down and engage the brake. Chain sensors shut down the lift if chain tension is lost. Chain tensioners and guides prevent chains from jumping on sprockets. NO RIDER signs posted at each point of operation.

CARRIAGE SIDE GUARDS
Carriage is equipped with safety rails on non-operating sides, and a safety chain, drop bars or gates on operating ends. Optional expanded metal or sheet metal carriage side guards available.

SAFETY ENCLOSURES / GATES
Safety codes (ASME B20.1) require interlocked gates with enclosures on all sides of the lift. Enclosures must be a minimum of 8’ high and reject a ball 2” in diameter. See page 23 for additional information.

OVER 40 YEARS

21 SERIES | 2-POST HYDRAULIC LIFT

Transports materials between two levels. Carriage remains level regardless of load placement.

- Lifts loads up to 8,000 lbs. Carriage sizes up to 12’ x 10’.
- Vertical rise to 22’. Standard vertical travel is 24 FPM.
- Straddle or cantilever.
- Indoor or outdoor use.
- Lifetime structural warranty.
- ASME B20.1 compliant.
- Carriage is lifted and lowered by chain over sprockets actuated by column-mounted cylinders. Synchronized shaft ensures that carriage stays level at all times.
- Highly stable loading and unloading operations maintained by pressure switch that prevents carriage from drifting or sinking.
- Check valves hold carriage in place in event of power loss
- Certified safety cams prevent carriage descent in the event of a chain failure.
- Velocity fuses prevent uncontrolled carriage descent in the event of a hose rupture.
- Field wiring costs greatly reduced by optional quick-connect cabling for push-button stations and gate interlocks.
- Optional hot-dipped galvanized or epoxy finish available for outdoor or wash-down environments.
- Explosion-proof components available for classified environments.
- DeckLock Safety System available for added security at critical upper levels.

GENERAL
Principal components of the 21 Series are guide columns, carriage and hydraulic actuating mechanism.

STRUCTURE
Guide columns are 6” wide flange. Carriage is fabricated of heavy-duty structural members with steel deck plate. Other deck surfaces available. Straddle or cantilever carriage available, depending on application.

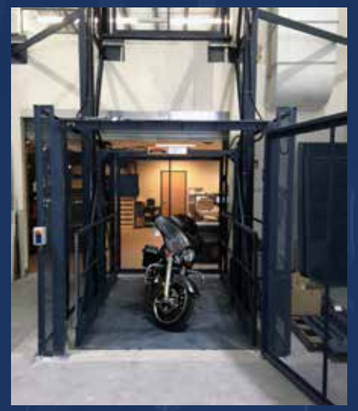
OPERATION
Carriage is lifted and lowered by two hydraulic cylinders mounted on guide columns. Cylinders are actuated by a remote mounted hydraulic pump. Transmission of the lifting force is through roller chain attached to the cylinders and carriage. A torsion bar links the two cylinders to equalize the load and ensure carriage remains level at all times.

ELECTRICAL
Standard power requirements are 208/230/460VAC, 3-phase (single-phase available). Control voltage is 24VAC. Push button stations and pump mounted pre-wired control panel are NEMA 12 rated. Push button stations provided at each level and include call/send operators and mushroom head emergency stop. Quick connect pre-wiring is optional.

SAFETY FEATURES
Upward travel of carriage limited by mechanical stops that ensure positive leveling with upper deck. Positive mechanical stops prevent overtravel. Pressure builds to “lock” carriage into position at upper level. NO RIDER signs posted at each point of operation. DeckLock Safety System available for added security at critical upper levels.

CARRIAGE SIDE GUARDS
Carriage is equipped with safety rails on non-operating sides, and a safety chain, drop bars or gates on operating ends. Optional expanded metal or sheet metal carriage side guards are available.

SAFETY ENCLOSURES / GATES
Safety codes (ASME B20.1) require interlocked gates with enclosures on all sides of the lift. Enclosures must be a minimum of 8’ high and reject a ball 2” in diameter. See page 23 for additional information.



OVER 40 YEARS

D SERIES | HYDRAULIC LIFT

Transports materials between two levels. Innovative design ensures highly-stable loading and unloading operations.

- Lifts loads up to 3,000 lbs. Carriage sizes up to 6’ x 6’.
- Vertical rise to 15’. Standard vertical travel is 17 FPM.
- Indoor or outdoor use.
- Lifetime structural warranty.
- ASME B20.1 compliant.
- Guided Dual-Pak design is direct action, with no cables, chains, sheaves, sprockets or bearings that can break.
- Highly-stable loading and unloading operations maintained by pressure switch that prevents carriage from drifting or sinking.
- Ultra-high molecular weight, polyethylene cylinder guide improves cylinder life by preventing cylinders from twisting.
- Check valves hold carriage in place in event of power loss.
- Velocity fuses prevent uncontrolled carriage descent in the event of a hose rupture.
- Field wiring costs greatly reduced by optional quick-connect cabling for push-button stations and gate interlocks.
- DeckLock Safety System available for added security at critical upper levels.
- Optional hot-dipped galvanized or epoxy finish available for outdoor or wash-down environments.
- Explosion-proof components available for classified environments.

GENERAL
Principal components of the D Series are guide columns, carriage and hydraulic actuating mechanism.

STRUCTURE
Guide columns are 6” wide flange. Carriage is fabricated of heavy-duty structural members with steel deck plate. Other deck surfaces available. Carriage is cantilever design and can be loaded from any of three operating sides, depending on application.

OPERATION
Carriage is lifted and lowered by two direct-acting hydraulic cylinders. Cylinders are actuated by a remote mounted hydraulic pump. Transmission of the lifting force is direct from the base of guide columns to the carriage, using a Dual-Pak ram.

ELECTRICAL
Standard power requirements are 208/230/460VAC, 3-phase (single-phase available). Control voltage is 24VAC. Push button stations are NEMA 12 rated. Pump mounted, pre-wired control panel is NEMA 12 rated. Push button stations provided at each level include call/send operators and mushroom head emergency stop. Quick connect pre-wiring is optional.

SAFETY FEATURES
Upward travel of carriage limited by mechanical stops that ensure positive leveling with upper deck. Positive mechanical stops prevent overtravel. Pressure builds to “lock” carriage into position at upper level. NO RIDER signs posted at each point of operation. DeckLock Safety System available for added security at critical upper levels.

CARRIAGE SIDE GUARDS
Carriage is equipped with safety rails on non-operating sides, and a safety chain, drop bars or gates on operating ends. Optional expanded metal or sheet metal carriage side guards are available.

SAFETY ENCLOSURES / GATES
Safety codes (ASME B20.1) require interlocked gates with enclosures on all sides of the lift. Enclosures must be a minimum of 8’ high and reject a ball 2” in diameter. See page 23 for additional information.

B SERIES | BOX LIFT

Transports loads to mezzanines and between floors. Ideal for lifting boxes, totes, cartons, barrels, sacks, cases and individual parts.

- Lifts loads up to 500 lbs.
- Standard carriage size is 3’ x 3’.
- Vertical rise up to 15’ 9”. 30” above floor loading position.
- Standard travel speed is 30 FPM.
- Indoor use only.
- ASME B20.1 compliant.

- Design allows loading and unloading from one of three sides at each level.
- Integral access gates provided at each level and interlocked with lift operation.
- Mechanical motor, electrical components and gear reducer located at base of unit; access panel creates ease of maintenance.
- Unit ships in modular sections pre-wired with “quick connect” wiring.
- Pre-assembled shipment is available, saving time and money on installation.
- Durable, high-quality materials and design ensure reliable long-term performance.
- Advanced built-in safety features protect workers and loads.
- Unit is positioned to load/unload at ergonomic heights on each level.

GENERAL
Principal components of the B Series are modular steel enclosure frame, mechanical drive assembly and lift carriage.

STRUCTURE
Stackable modular-formed steel panels provide full-height guarding, and internal guide for carriage assembly. Gate arrangement can be easily changed for right-hand or left-hand swing open pattern.

OPERATION
Carriage is lifted and lowered by dual roller chains connected to electric motor-reducer assembly. Motor-reducer assembly is mounted within lift enclosure at floor level, with easy-access door for maintenance.

ELECTRICAL
Standard power requirements are 230V single-phase or 230V/460V 3-phase. Low voltage controls. NEMA 12 rated momentary contact push button stations are provided for each level and include mushroom head E-stop. Quick-connect wiring is provided, and ships partially pre-wired to expedite installation.

SAFETY FEATURES
The B Series Box Lift is the safest small modular package lift on the market Its safety elements include exclusive spring-loaded dual safety pins to prevent uncontrolled descent in case of chain failure, electro-mechanical door interlocks, full-height safety enclosures, and overload protection.

SAFETY ENCLOSURES / GATES
Standard units include interlocked swing gates, and full-height enclosures on all sides. See page 23 for additional information.

DB SERIES | PACKAGE HANDLING LIFT

Transports loads to mezzanines, between floors or between conveyor levels. Ideal for high-speed applications that require lifting boxes, cartons, packages, totes, containers or cases.

- Lifts loads up to 100 lbs.
- Standard carriage size is 3’ x 3’.
- Standard travel speed is 60 FPM.
- Indoor use only.
- Loading and unloading accessible from three sides.

- Saves space by handling loads often transported on an inclined conveyor.
- Smooth, quiet counterweight lifting mechanism minimizes horsepower requirements and saves energy.
- Completely self-contained, self-supporting and economical.
- Durable, high-quality materials and design ensure safe, reliable long-term performance.

GENERAL
Principal components of the DB Series are guide columns, carriage and mechanical actuating mechanism. All components are pre-assembled for ease of installation.

STRUCTURE
Frame is constructed of structural steel, and designed to be self-supporting. Carriage is typically supplied with powered roller conveyor deck. Carriage is a cantilever design, and can be loaded from any of three operating sides, depending on the application.

OPERATION
Carriage is lifted and lowered by dual chains connected to electric motor-reducer assembly. Power unit employs a fractional HP brake motor mounted to top of lift frame.

ELECTRICAL
Standard power requirements are 230V/460V, 3-phase. Control voltage is 110VAC. Standard push button stations and control panel are NEMA 12 rated. Control panel is designed to be mounted to back of frame; all control devices are pre-wired by manufacturer. A variety of control options are available, from basic interface to PLC automated controls.

SAFETY FEATURES
Travel of the carriage is controlled by a limit switch. When the switch is tripped or power is lost, the motor shuts off and the mechanically actuated brake is engaged. Overload and carriage over-travel protection is provided.

SAFETY ENCLOSURES / GATES
Standard units include integral, full-height enclosures on all sides made of 1/2” expanded metal. See page 23 for additional information.

VRC | GATES & ENCLOSURES

Code approved, space efficient, and built for maximum protection and performance.

PFlow safety gates are equipped with a mechanical lock and electric contact, meeting code requirements for manual loading applications.

Single & Bi-Parting Swing Gates
- Standard single and bi-parting swing gates provide 7’ 0” H load clearance.
- Maximum single panel width: 6’ W (overall) mounted on a 5’ 0” W carriage.
- Standard bi-parting panel width: Up to 11’ 0” W (overall) mounted on a 10’ 0” W carriage.

Single & Bi-Parting Sliding Gates
- Pneumatic operators available for push-button operation.
- Standard single and bi-panel slide gates provide 7’ 0” H load clearance.
- Standard single panel width: Up to 11’ 0” W (overall) mounted on a 10’ 0” W carriage.
- Standard bi-parting width: Up to 22’ 0” W (overall) mounted on a 20’ 0” W carriage.

Single & Bi-Panel Vertical Acting Gates
- Pneumatic or motorized operators available for push-button operation.
- Counterbalanced with an exclusive cross-shaft design to always keep gate level.
- Non-binding UHMW sliding guides offer superior damage resistance.
- Chain, instead of cable, provides greater durability.
- Standard single panel height and bi-panel closed height is 6’ 0” H and provides 7’ 0” H clearance.
- Standard width: Up to 14’ 0” W for 12’ 0” W carriage.

Swing Gate

Sliding Gate

Vertical Acting Gate

Innovative product designs ensure safe loading and unloading for workers and materials.

PFlow enclosures are code approved and made of ½” flattened expanded metal for superior strength and longevity.

Enclosures Built to Protect and Last
- PFlow standard panels are 6” to 5’ wide.
- Panels are painted PFlow Blue. Custom paint colors available upon request.
- All mounting hardware included.
- Non-standard sizes, custom finishes and galvanized panels available upon request.

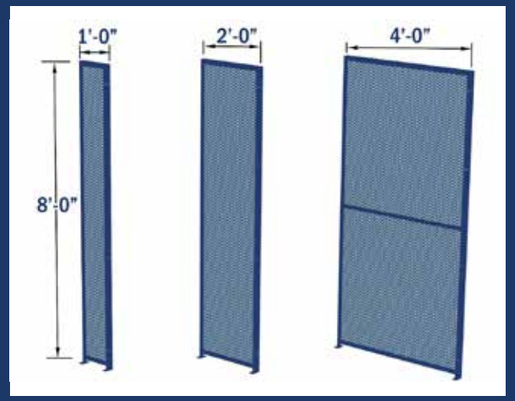
Required Design Standards for Lifts and Gates
All accessible sides of a unit not used for loading or unloading must be protected by enclosures at least 8’ high, and capable of rejecting a ball 2” in diameter at each level. Any combination of shaftways, walls or permanent enclosures that provide equivalent protection is acceptable. If lift service is to the edge of a mezzanine or balcony, only minimal enclosures are required because the equipment is guarded by location.

Fire Code Requirements
If a floor is penetrated, contact your insurance company or local fire authorities to determine if a fire-rated enclosure is required.

Optional Visual Safety Barrier
Additional safety at upper most level can be provided when the access gate is open and the carriage is not present.

Shaftway Applications
When a VRC is penetrating floors that are rated due to fire breaks or environmental conditions, walls and doors configured by others to meet the required conditions may be required. The term typically used is “shaftway.” PFlow VRCs can regularly be found behind interlocked doors in new installations, or replacing freight and service elevators, ash lifts, dumbwaiters and other lifting devices.

Enclosures



PFlow enclosure panels are designed to fit your custom application and comply with local guarding requirements.

Optional Visual Safety Barrier

Lowered barrier

Raised barrier for access

Safety Features that Perform and Protect

As the pioneering company of the VRC industry, PFlow has engineered safety as a top priority in all its products. Our tremendous research and development emphasis on safety has generated many unique product features, all which meet or exceed code requirements.

Certified Safety Cams

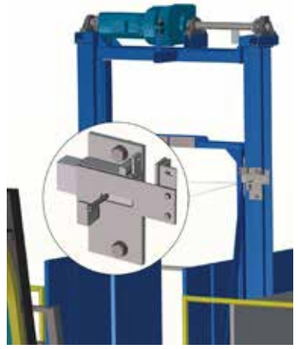
- In the unlikely event of a lifting chain break, the safety cam will immediately and automatically rotate into position.
- Safety cams are mounted on the carriage and positioned between the flanges of the guide column.
- Spring-loaded and designed with a series of hardened teeth.

As the safety cams rotate into position, the downward pressure of the carriage forces them into the flanges of the guide columns, preventing carriage descent. When chain tension is returned to normal, the cams rotate back to their inoperative position, allowing the VRC to resume operation. On the M Series and F Series, slack or broken chain conditions are sensed by a switch on the chain tensioner assembly, which cuts power to the drive. All units should be fully inspected before resuming service.

DeckLock System (Optional)

- Protects workers, materials and machines by eliminating accidents caused by carriage drop.
- High-capacity DeckLocks automatically extend to prevent uncontrolled descent at critical upper levels.
- Ensures safe loading and unloading with a forklift.
- Prevents uncontrolled descent in the case of overload or brake malfunction during loading/unloading operations.
- Gate-operated mechanical, pneumatic and electric versions available.
- Can provide absolute positioning if required.

PFlow VRCs are built with a substantial safety factor, but inadvertent overload or lack of maintenance can result in dangerous, unintentional carriage descent. Mechanical VRCs depend upon spring-set brakes to maintain the carriage position. These brakes are sized to provide a minimum of 150% of maximum load capacity; however, wear and lack of brake maintenance can reduce that capacity. Overload of the carriage can cause brake slippage. The exclusive PFlow patented DeckLock system provides additional safety under these conditions.



Maintenance Pins (Optional)

Optional, manually-actuated maintenance pins provide additional safety when performing service on the VRC. The pins extend under the carriage structure to provide one-way assurance that the VRC carriage is properly secured.

Note: Two means to secure the carriage is normally required.

Product Patents Reflecting a Never-ending Commitment to Innovation

PFlow holds more than 20 patents, far exceeding all competitors. It's no surprise. With the largest engineering team in the industry, and a culture focused on innovation, PFlow continues to create new breakthroughs in vertical lift performance and safety.

Quantum Drive

Exceptional performance, durability, increased capacity and faster speeds! This quantum leap in chain-driven technology features reduced vibration and less maintenance. Patent pending.

DeckLock

This exclusive safety system protects workers, materials and machines by preventing uncontrolled carriage descent from upper levels due to overload or brake malfunction.

Moving Floor System

High productivity, coupled with improved safety, are built into this ultra-efficient moving floor assembly line. The flexible design especially lends itself to assembly of large machinery.

Vehicle Display System

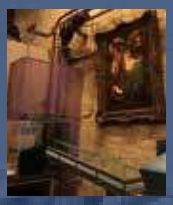
Car shopping reaches new heights with this innovative structure, which is custom built for vehicles from small cars to large buses. Vehicles are loaded and unloaded with minimal labor and maximum exposure.

PFlow Patents

1	9,598,242	Moving floor system
2	8,789,661	Visual warning barrier for door assembly
3	8,328,003	Shopping cart conveyor with gate assembly
4	8,075,237	Multi-level vehicle lift
5	7,931,136	Jam sensor for shopping cart conveyor
6	7,779,992	Shopping cart conveyor system with pivoting lug
7	7,453,358	Shopping cart conveyor with gated access
8	7,131,532	Belt attachment device and method
9	6,896,125	Belt attachment device and method
10	6,644,210	Shopping cart conveyor/front wheel alignment/turning system
11	6,490,979	Inclined shopping cart conveyor system
12	6,394,260	Conveyor system including roller-guided carriage assemblies
13	6,360,848	Safety system for a vertical reciprocating conveyor
14	5,941,347	Portable lift
15	5,908,088	Hydraulic drive mechanism for a vertical conveyor
16	5,601,157	DeckLock
17	5,408,789	Overhead security door
18	5,228,537	Safety mechanism for a vertical reciprocating conveyor
19	5,205,379	Vertical conveyor
20	4,987,992	Material transfer apparatus
21	4,227,463	Apparatus for removing and installing batteries

Elevating Innovation Since 1977

We've designed custom lifts for everything ...

from Truffles  **to Toyotas**  **to Telescopes**  **and more.**

PFLOW INDUSTRIES

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ACTT 4X2 ON ROAD

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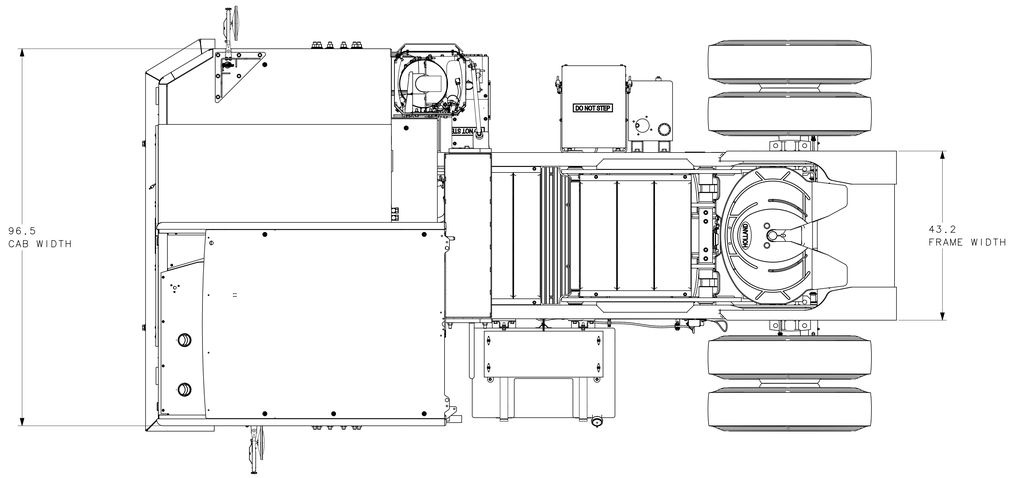
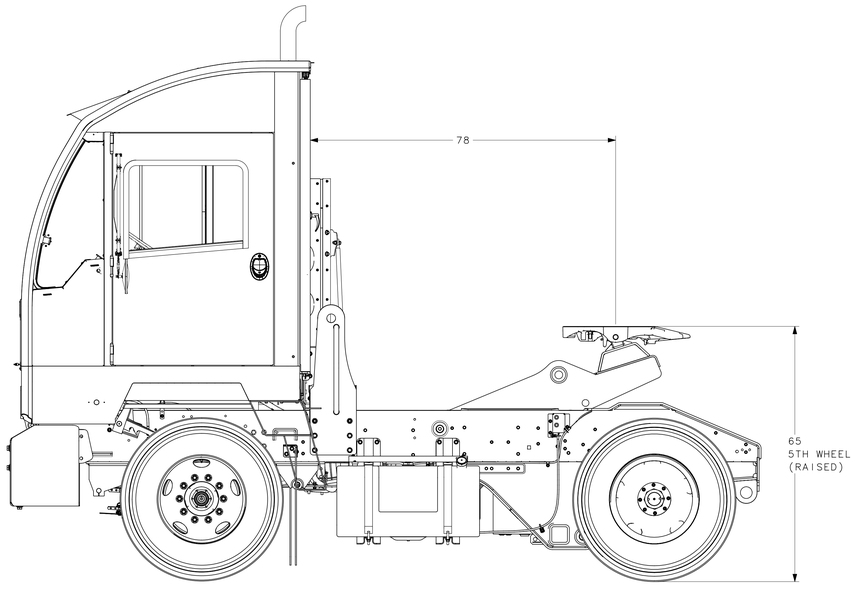
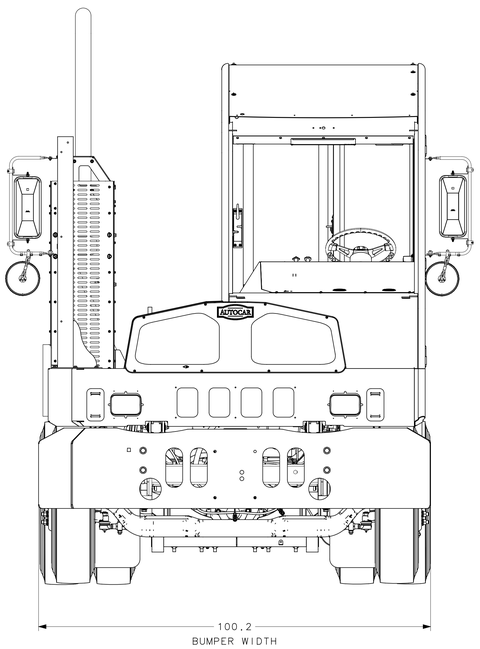
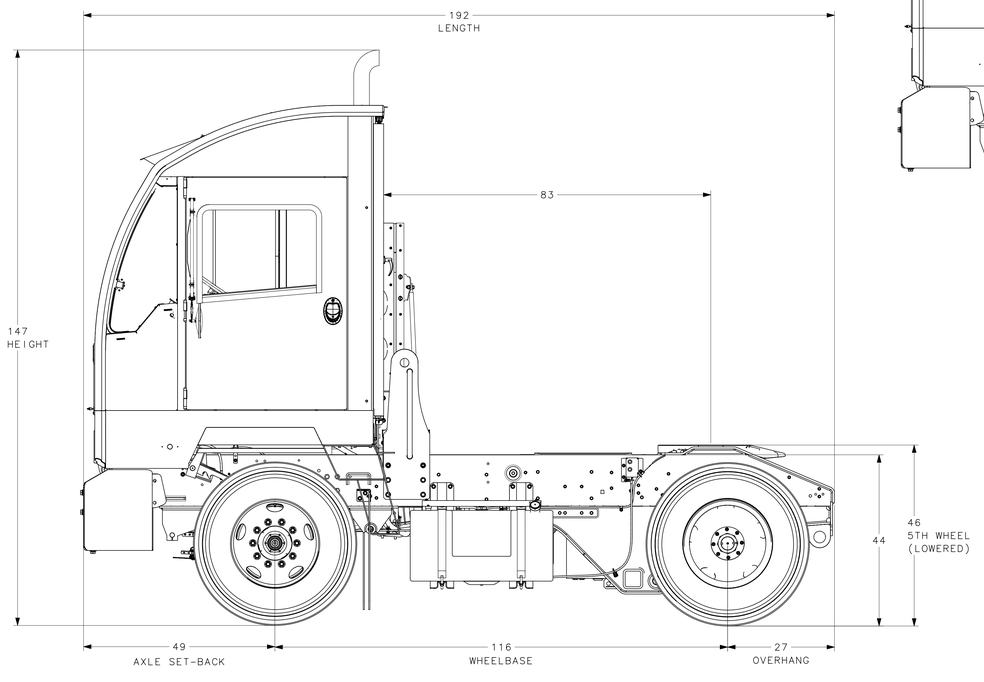
MERITOR MFS-14 14.7K STEER AXLE
MERITOR RS24-160 DRIVE AXLE
SOLID REAR SUSPENSION
116" WHEELBASE
ALL DIMENSIONS IN INCHES









Autocar MY 2018 4x2 DOT/EPA Compliant Terminal Tractor Standard Specifications

Engine and Equipment	Standard	Optional
Engine model	Cummins '13/17 ISB diesel - 200 HP @ 2600 RPM 520 ft-lb torque @ 1600 RPM	*Cummins '13/17 ISB Diesel - 260HP @ 2600RPM/660 LB-FT @ 1600RPM* *Cummins ISL-G (CNG/LNG) - 260HP @2200RPM/660 LB-FT@1600RPM*
Exhaust	Horizontal DPF w/ vertical SCR; 5 gallon DEF tank, right side mounted	*10 gallon DEF tank, Vertical DPF/SCR (2017 ISB)*
Air cleaner	Donaldson 11 inch single stage	*11" 2 stage/Donaldson inline precleaner/Donaldson topspin precleaner/exhaust turn-out*
Radiator	1000 sq in copper brass	
Fan & drive	Viscous Fan Drive	
Coolant hoses/piping	Silicone hoses with steel tubing	
Coolant	Extended life coolant	
Engine Equipment	Fleetguard FS 1003 F/W Separator w/ probe & dash light	*Fleetguard FS 1003 with heat/Davco 382 with heat* *Engine block heater (750/1000W)/Oil pan heater/engine oil sample port* *Arctic Fox in-tank fuel heater w/ thermostat*

Transmission and Equipment		
Transmission model	Allison 3000 RDS	*(Allison 3500 RDS)*
Transmission gearing	4-speed	*(3-speed or 5-speed)*
Transmission controls	Allison push button	*(Allison t-handle)*
Transmission cooler	Oil to water type	
Transmission lubricant	TranSynd™ synthetic	
Driveshaft	Dana Spicer® 1710 half-round	

Front Axle and Equipment		
Axle model	Meritor MFS Widetrack (14,700lb rated)	*Dana Spicer® E-1322-W (13,200 lb rated)*
Front suspension	Flat leaf (14,500 lb rated)	
Shock absorbers	Double acting - heavy duty	
Power steering	Gearbox, integral steering w/ mechanical backup	
Power steering reservoir	Integral w/ hydraulic tank	
ABS	Bendix 4S4M w/o traction control	*(required for vehicle speeds over 33 MPH)*
Brakes	16.5 x 5 s-cam	
Brake drums	Cast iron	
Slack adjusters	Meritor automatic slack adjusters	*Haldex slacks*
Front hubs	Iron hub piloted	

Rear Axle and Equipment		
Axle model	Meritor S24-160 (single reduction)	*(Meritor RS23-186, RS30-380)* *(Dana Spicer® S23-170, S23-190, S30-190 & S30-590)* *(Sisu 30 S Planetary axle)*
Rear axle ratio	7.17:1	*(ratio based on selected axle & performance)*
Rear suspension	Solid	*Rear spring suspension w/ aeon cushions*
ABS	Bendix 4S4M w/o traction control	*(required for vehicle speeds over 33 MPH)*
Brakes	16.5 x 7 s-cam	
Brake drums	Cast iron	
Slack adjusters	Meritor automatic slack adjusters	*Haldex slacks*
Rear hubs	Iron hub piloted	
Gear lubricant	Synthetic	

Chassis and Equipment		
Wheelbase	116 inch	*122", 128"*
Frame	2.0 million RBM, 50,000 KSI steel, 'C'-reinforced	
Frame fasteners	Huck bolts where possible	
Bumper	Steel reinforced bumper	Heavy duty reinforced bumper
Tow device(s)	Front & rear tow eyes	
Mud flaps	Rear of drive tires	

Pneumatic System (Rapid Fill)		
Air compressor	Wabco 18.7 CFM	
Air system drain valve	Manual petcocks all tanks	*Pull cords on all tanks, 1/4 turn valve tank drains*
Air lines	Nylon, color coded	
Brake system	121 air brake system, front/rear system protection	

Fuel System		
Fuel tank	50 gallon steel rectangular w/ deep step, left side mounted	*50 gallon step tank, 40 gal round tank (18" dia)*
Fuel filter	Cummins	
Fuel lines	SAE J844 nylon	

5th Wheel and Hydraulic System

5th wheel	SAF/Holland 70,000 lb semi-oscillating 16 inch lift bearings	*(SAF/Holland 100,000 lb, Jost, Fontaine options)*
Hydraulic lift cylinders	(2) 5 inch 50,000 lb capacity, upper & lower spherical bushings	*(limited lift height cylinders)*
Hydraulic tank	15 gallon steel tank w/ sight glass	
Pump	Engine mounted	*Chelsea PTO 280-5RK*

Trailer Equipment

Air connections	15' straight rubber trailer hoses w/spring hanger	12 ft color coded coiled w/ glad-hands
7-way electric cable receptacle	7-way electric cable 12 FT	12 ft coiled detachable

Tires and Wheels

Front tires	11R22.5 Doublecoin	*Low-Pro (295/280/275)/Goodyear, Michelin, Continental*
Front wheels	Steel 22.5 x 8.25 hub piloted, 285mm BC	*22.5x8.25" Steel 2 HH wheel, customer supplied wheels/tires*
Rear tires	11R22.5 Doublecoin	*Low-Pro (295/280/275)/Goodyear, Michelin, Continental*
Rear wheels	Steel 22.5 x 8.25 hub piloted, 285mm BC	*22.5x8.25" Steel 2 HH wheel, customer supplied wheels/tires*
		V2B flow through valve caps

Electrical System

Electrical System	12V, negative ground	
Alternator	Delco Remy 22SI 130AMP	*Delco 160 AMP, 28SI w/ Remote Sense pad mount*
		Mitsubishi 12V 160 AMP pad mount
Starter	Denso 12V	
Batteries	(2) group 31 950 CCA (min)/1900 CCA total	*2000CCA, 3000CCA, AGM batteries 1800CC, 2300 CCA*
Circuit protection	Automatic circuit breakers	
Windshield wipers	Single electric (pantograph) intermittent w/washer	*(single radial arm overhead, horizontal park)*
Backup alarm	Non-motion detecting	*(motion detecting, CA compliant)*
Horn	Single	*(air horn - roof or under-cab mounted)*

Lighting

Headlamps	Low/high halogen	*LED Headlights, Spot-style headlights, direct wired*
Backup light, stop & turn signals	LED stop & turn, incandescent backup, shock resistant mount	*LED spot lights, alternate positioning*
BOC 5th wheel light	Incandescent, shock resistant mount	
Marker and side turn signals	LED	

Cab and Equipment

Cab construction	• Electrocoated (e-coated) steel, full cab immersion • (Rust Prevention Coating)	
Cab dimensions (outside)	Raised roof, 52" wide x 71" deep (w/o rear door) x 78" high (deck to roof)	
Cab doors	Left side hinged door w/ manual crank window, aluminum sliding rear door	
Rear door opening (useable)	24" wide x 72" high	
Cab floor	Sweep out floor w/ durable mat	
Cab dash	Steel wrap around	
Overhead console	Steel	
Cab mounting	4 point, rear dual (2) air suspensions	3-point spring
Cab tilt	Electric over hydraulic	
Glass	Tinted, laminated windshield	
Mirrors	Dual SST west coast mirrors	*(heated primary, motorized primary, convex)*
Cab climate control system	44,000 BTU fresh air heater	*(air conditioning)*
Steering column	Fixed	Titl/telescopic
Steering wheel	18 inch 2-spoke	
Seat	Air suspension, mid-back **without** fore/aft isolation	*(air suspension, mid-back **with** fore/aft isolation)*
Seat covering	Black Cordura Plus® cloth fabric	*Vinyl seat cover*
Seat belt	3-point orange	
Dome light	Switch on dash	
Power ports	(2) 12V	
Air horns	Mounted under cab	Mounted R/S top of cab
Translucent sun visor	Single	
Conspicuity tape		

Operators Controls	Cab Instrumentation	Cab Warning Devices
Park brake - push/pull	Speedometer	Park brake
Headlamps	Engine oil pressure	High beam
Turn signal - column mounted	Coolant temperature	Turn signal
Brake pedal *(dual pedal optional)*	Transmission oil temperature	Low fuel
Accelerator pedal	Fuel level/ DEF level	Low air
5th wheel height control	Primary (A) air pressure	Seat belt
5th wheel lock	Secondary (B) air pressure	DPF
Transmission gear selector - Push button	Hour meter	HEST
	Voltmeter - optional	Air restriction indicator
	Tachometer - optional	Filter with water in fuel indicator
		Fifth Wheel height indicator/lock indicator - optional

Paint

Cab	White	*(customer specific colors)*
Chassis	Black	*(customer specific colors)*
Bumper	Black	*(customer specific colors)*
Wheels	White powder coat	*(customer specific colors)*

Optional Equipment

Air Dryer (ADIP, AD-9, Wabco)	Glad-hand and 7-way cable storage	Cab fan
Fuel/water separator w/ heater	Battery disconnect switch	AM/FM radio/CD w/ aux input, speakers & antenna
Engine block heater	Air restriction indicator w/ dash light	5# ABC fire extinguisher
Oil pan heater	Amber beacon light	Triangle kit
Beavertail/frame extension/kingpin guides	Spot/work/flood lights	Additional instrumentation
Front axle mudflaps	Rear door laminated glass	Lever start, no key/pushbutton start
Rear axle mudflap (front)	Training seat	Double blink strobe light, other strobe/beacon options
Rear flexible fenders	Auto lube system (Interlube)	Trailer hand brake
Fender skirt./splash protector	Trailer stops/full cab guard	Two stage air cleaner
Glad hand buckets	Dock bumpers (cab)	Trailer Rapid fill system
Additional engine tunnel insulation	Additional decking, side cab catwalk	Pneumatic 5th wheel lockout
360 degree swivel trailer light	Safety yellow decking	Cab document storage
Premium seating options (swivel, heated)	Diamond plate cab floor	Dollymaster, pintle hook options
Rear diff lock	RH deck access steps	

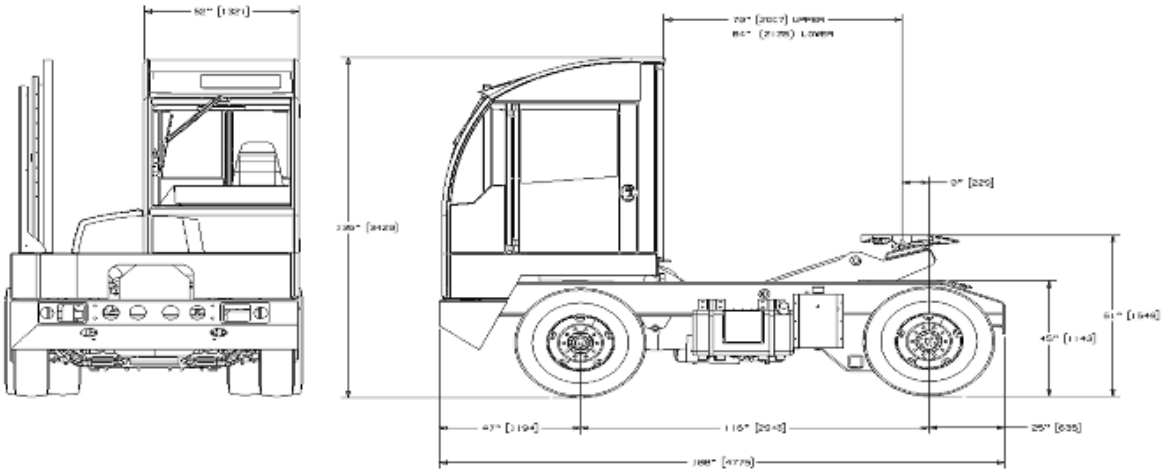
Vehicle Ratings

Vehicle tare weight, front		
Vehicle tare weight, rear		
GAWF	13,200 lbs	
GAWR	23,000 lbs	
GCW	80,000 lbs	

Performance

Basic Warranties (Industry Best)

Autocar terminal tractor	1 year or 3,000 hours whichever occurs first, parts & labor	
Frame	7 years or 20,000 hours whichever occurs first	
Cummins engine	ISB - 3 years parts & labor (2,000 hours)	
Allison transmission	3 years parts & labor	*5 year optional*
Dana axles	3 years parts & labor	
Meritor Axles	(24-160 only) 6 months, parts only	2 years parts & labor



Autocar Industries, LLC • 551 South Washington Street • Hagerstown, IN 47346
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ATTACHMENT AA

CERTIFICATION OF NOTICE FORM – NOTICE OF APPLICATION

Connecticut Department of Energy & Environmental Protection

Will be re-submitted to CT DEEP after public notice is completed.

Certification of Notice Form - Notice of Application

DEEP USE ONLY
Division
Application No.

I , **Covanta Bristol, Inc.**, certify that
(Name of Applicant)

the attached notice represents a true copy of the notice that appeared in **Bristol Press**
(Name of Newspaper)

on _____
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Ellen Zoppo-Sassu	**Mayor, City of Bristol**	
Name of Official	*Title of Official*	
111 North Main Street		
Address		
Bristol	**CT**	**06010**
City/Town	*State*	*Zip Code*
Signature of Applicant	*Date*	
John Walker	**Vice President**	
Name of Applicant (print or type)	*Title (if applicable)*	

ATTACHMENT A

TABLE OF CONTENTS AND EXECUTIVE SUMMARY / PROJECT NARRATIVE

ATTACHMENT A
TABLE OF CONTENTS

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Attachment J: Business Information J-1: Detailed Statement from Certified Public Accountant J-2: Financing, Design, Construction, and Startup Documents J-3: On-going Operations Documents J-4: Land Ownership Documents J-5: Agreements Between Parties and Service Agreements J-6: Organization Chart J-7: Planning and Zoning Approval	DEP-SW-APP-103	J: 2 pages J-1: 5 pages J-2: 1 page J-3: 19 pages *J-4: Inc. by Ref.* J-5: 1 page J-6: 1 page J-7: 1 page
Attachment K: Facility Plan BMW Addendum to Operations and Management Plan Attachment 1: Engineering Drawings Attachment 2: Organization Chart Attachment 3: Letter of Agreement with Covanta Facilities	--	29 pages
Attachment L: Determination of Need Information	DEP-SW-APP-104	15 pages
Attachment M: Checklist for Solid Waste Disposal Areas (Landfills)	*Not Applicable*	--
Attachment N: Certification Regarding Activities Previously Licensed by DEP	DEP-SW-APP-105	1 page

Covanta Bristol, Inc.
Bristol Resource Recovery Facility
170 Enterprise Drive, Bristol, CT 06010

ATTACHMENT A
EXECUTIVE SUMMARY/PROJECT NARRATIVE

for

Application to Amend Solid Waste Permit to Operate PTO No. 01701072-PO and Process Biomedical Waste

February 2021

Attachment A – Executive Summary/Project Narrative

Covanta Bristol, Inc

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List of Acronyms

^{0}F – Degrees Fahrenheit

ACI – Activated Carbon Injection

Act – California Medical Waste Management Act

APC – Air Pollution Control

Application – Permit Application for the Construction and Operation of a Solid Waste Facility

BMP – Best Management Practice

BMW – Biomedical Waste

Bristol Facility – Covanta Bristol, Inc./Bristol Resource Recovery Facility

Cd – Cadmium

CDPH – California Department of Public Health

CEM – Continuous Emission Monitor

CES – Covanta Environmental Solutions

CFR – Code of Federal Regulations

CGS – Connecticut General Statutes

CO – Carbon Monoxide

CO_2 – Carbon Dioxide

Covanta – Covanta Holding Corporation

CT DEEP – Connecticut Department of Energy and Environmental Protection

DAS – Data Acquisition System

F.A.C. – Florida Administrative Code

FDEP – Florida Department of Environmental Protection

Facility – Covanta Bristol, Inc./Bristol Resource Recovery Facility

FF – Fabric Filter

GCP – Good Combustion Practices

H_2O – Water

HCl – Hydrogen Chloride

HF – Hydrogen Fluoride

Hg – Mercury

HMIWI – Hospital, Medical, and Infectious Waste Incinerator

MCF – Material Characterization Form

mg/dscm – Milligram per Dry Standard Cubic Meter

MSW – Municipal Solid Waste

MWC – Municipal Waste Combustor

MWI – Medical Waste Incinerator

N_2 – Molecular Nitrogen

ng/dscm – Nanogram per Dry Standard Cubic Meter

NO_x – Oxides of Nitrogen

O&M Plan – Operations and Management Plan

O_2 – Oxygen

OFA – Overfire Air

Pb – Lead

PCDD/PCDF – Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans

PM – Particulate Matter

ppmvd – Parts Per Million by Volume, Dry

Program – California Medical Waste Management Program

PTO – Permit to Operate

QA/QC – Quality Assurance/Quality Control

RCRA – Resource Conservation and Recovery Act

RCSA – Regulations of Connecticut State Agencies

SDA – Spray Dryer Absorber

SNCR – Selective Non-Catalytic Reduction

SO_2 – Sulfur Dioxide

SWDA – Special Waste Disposal Authorization

TPD – Tons Per Day

UFA – Underfire Air

µg/dscm – Microgram per Dry Standard Cubic Meter

USEPA – United States Environmental Protection Agency

VPP – Voluntary Protection Program

WFS – Waste Feed System

WTE – Waste to Energy

Section 1 – Introduction

Section 1.1 – Purpose of Application

The purpose of this Permit Application for the Construction and Operation of a Solid Waste Facility (the Application) is to obtain authorization from the Connecticut Department of Energy and Environmental Protection (CT DEEP) to receive and process biomedical waste (BMW) by incineration with energy recovery at the Covanta Bristol, Inc./Bristol Resource Recovery Facility (Bristol Facility or Facility) located at 170 Enterprise Drive, Bristol, Connecticut. The Application consists of a completed Form DEP-SW-APP-100, this executive summary/project narrative to Form DEP-SW-APP-100, and other required forms and supporting documentation. The Application demonstrates that the Bristol Facility can successfully and safely process BMW in a manner protective of public health.

This Application seeks approval for BMW treatment by incineration with energy recovery within the existing municipal waste combustor (MWC) units at the Bristol Facility. Covanta is also proposing designated storage areas for BMW and an automated feed system to directly feed the BMW to the MWC units. In addition, this Application seeks to modify the current Permit to Operate (PTO) No. 01701072-PO for the Bristol Facility to approve changes to the site plan and the operations and management plan (O&M Plan) of the Facility.

Covanta Bristol, Inc is proposing to implement this BMW program at the Bristol Facility to satisfy a need for safe, sustainable BMW disposal for Connecticut healthcare. Program benefits will include reduced BMW transportation and disposal costs for the Connecticut healthcare industry, increased funding for the local Bristol community mitigation activities in accordance with an executed host agreement, and enhanced economics so the Bristol Facility continues to be financially feasible to operate in the future.

Covanta's BMW program has been well established for over 30 years. The BMW program includes a rigorous compliance assurance program for waste profiling, waste acceptance criteria, and BMW facility site audits to ensure shipments of BMW meet specifications. Operating, maintenance, contingency, and training plans have been developed and implemented at three (3) of Covanta's existing resource recovery facilities located in Marion County, Oregon, Lake County, Florida, and Huntsville, Alabama. Covanta's resource recovery facilities are designed with combustion controls and air pollution control technology that destroy pathogens and ensure no increase in emissions result from the combustion of municipal solid waste (MSW) together with BMW. The facilities are equipped with state-of-the-art delivery systems that minimize employee handling of BMW.

Section 1.2 – Facility Overview

The Bristol Facility began commercial operation in May 1988 on an 18.2-acre site in Bristol, Connecticut. It includes two (2) large MWCs which are permitted to process a total of 716 tons per day (TPD) of solid waste per day and generate 16.3 megawatts of renewable energy, with most being sold to Eversource Energy. The Bristol Facility is owned and operated by Covanta Bristol, Inc. with an agreement serving 14 Communities that are members of the Bristol Resource Recovery Policy Board.

The Bristol Facility is equipped with two (2) 358 ton-per-day water wall furnaces using Martin® GmbH reverse-reciprocating grates and ash handling systems. Each unit is equipped with state-of-the-art air pollution control equipment including a selective noncatalytic reduction (SNCR) ammonia injection system for the control of oxides of nitrogen (NO_x), a semi-dry flue gas scrubber in which lime is injected for acid gas control, an activated carbon injection system for the control of mercury (Hg) and organic substances, and a pulse jet fabric filter (FF) for secondary control of acid gases, organics, and particulate. The combustion units are also equipped with continuous emissions monitoring systems to ensure that the facility's emissions profile are consistently well below applicable emission standards.

Section 1.3 – Application Organization

This executive summary/project narrative to Form DEP-SW-APP-100 provides the CT DEEP with reasonable assurance that the combustion of BMW with MSW at the Bristol Facility will be in accordance with applicable laws and rules and in a manner that is protective of public health. Following the introductory material in Section 1, Section 2 presents definitions of terms, listings of acceptable and unacceptable biomedical wastes for the proposed project. Section 3 contains a discussion of issues faced by the BMW waste industry and the need for BMW incineration in CT. A description of Covanta's BMW program is included in Section 4. A description of the process operations at the Bristol Facility, including proposed waste feed system modifications, is provided in Section 5. A description of air emissions with and without the combustion of BMW with MSW is presented in Section 6. A discussion of design and operating factors which provide assurance that the proposed combustion of BMW together with MSW will be conducted effectively and safely is presented in Section 7. The benefits of the proposed project are discussed in Section 8. Appendix A contains the existing Special Waste Disposal Authorization for the Bristol Facility. The summary of a Temperature Correlation Test Report performed on the MWC units at the Bristol Facility is contained in Appendix B. A copy of the permit issued by the Florida Department of Environmental Protection (FDEP) to approve the combustion of BMW with MSW at Covanta's Lake County Florida Facility is contained in Appendix C. Appendix D provides an overview of Covanta's Biomedical Waste Generator Auditing Program. Letters of Support for the proposed project from the City of Bristol to the CT DEEP dated April 14, 2020 and October 14, 2020 are contained in Appendix E.

Section 2 – Connecticut Biomedical Waste Regulation

Section 2.1 – Connecticut Biomedical Waste Definitions

The CT DEEP is the agency responsible for regulating BMW generation, storage, transfer, transport, treatment and disposal. BMW regulations in the State of Connecticut are codified at Section 22a-209-15 of the Regulations of Connecticut State Agencies (RCSA) incorporating Sections 22a-209b and c of the Connecticut General Statutes (CGS).

Under Section 22a-209-15, BMW is generally defined as infectious, pathological and/or chemotherapeutic waste generated during the administration of medical care. This excludes hazardous and radioactive waste as defined in State law and certain medical wastes generated by residences, farms, and law enforcement agencies.

Infectious waste is defined as:

"waste which is capable of causing an infectious disease, is one of the wastes listed below, or is waste identified as infectious by a licensed health care provider. Waste shall be deemed capable of causing an infectious disease if there is reason to believe that it has been contaminated by an organism that is known or suspected to be pathogenic to humans and if such organism may be present in sufficient quantities and with sufficient virulence to transmit disease. The following are listed as infectious waste:

(1) Any discarded culture or stock of infectious agents and associated biologicals, including human and animal cell cultures from clinical, hospital, public health, research and industrial laboratories; any waste from the production of biologicals; any discarded etiologic agent; any discarded live or attenuated vaccine or serum; and any discarded culture dish or device used to transfer, inoculate, or mix cell cultures.

(2) Any body fluid, waste human blood, or waste blood product, any container of any of the foregoing, and any disposable item that is saturated or dripping with a body fluid or that was saturated or dripping with a body fluid and has since caked with dried body fluid.

(3) Any discarded used sharp and any residual substance therein.

(4) Any discarded unused hypodermic needle, scalpel blade, suture needle or syringe.

(5) Any discarded animal carcass, animal body part or animal bedding, when such carcass, part or bedding is known to be contaminated with or to have been exposed to an infectious agent.

(6) Isolation waste.

(7) Any material collected during or resulting from the cleanup of a spill of infectious or chemotherapy waste.

(8) Any waste which is neither a hazardous waste pursuant to Section 22a-115 of the General Statutes nor a radioactive material subject to Section 22a-148 of the General Statutes and which is mixed with infectious waste.

Pathological waste is defined as:

"any human tissue, organ, or body part removed during surgery, autopsy or other medical procedure. Pathological waste does not include formaldehyde or other preservative agent, or a human corpse or part thereof regulated pursuant to Section 7-64 or Chapter 368i, 368j or 368k of the General Statutes.

Chemotherapy waste is defined as:

"waste which has come in contact with an antineoplastic agent during preparation, handling or administration of such an agent. A container which is or has been used to contain such an agent shall be deemed chemotherapy waste even if such container is empty."

"Trace Chemo" is a term used to describe Resource Conservation and Recovery Act (RCRA) empty containers used to administer chemotherapy medications. "Bulk Chemo" is a term used to differentiate chemotherapy containers that are not RCRA empty.

Solid waste regulation 22a-209-15 includes requirements on how BMW is to be managed, including rules for storage, transfer, transport, treatment and disposal. Under 22a-209-15 (f), the methods of BMW treatment and disposal are as follows:

- Chemotherapy waste – **by incineration only**;
- Pathological waste (i.e., human tissue, organs, etc.) – **by incineration only**; and
- Infectious waste (i.e., body fluids or items dripping with body fluids, discarded sharps, BMW generated from research, etc.) – either by **incineration**, discharge to a sanitary sewer, treatment by steam sterilization or other alternative treatment technology.

The Covanta Biomedical Waste Program provides services that address the disposal needs of these BMW streams.

Biomedical Waste regulation 22a-209-15 defines "Incinerator" to mean:

"any device, apparatus, equipment or structure as defined in Sections 22a-174-1 and 22a-174-18 (c) (1) of the Regulations of Connecticut State Agencies."

The Covanta Bristol MWC units are regulated under 22a-174-1 and 22a-174-18 (c) (1) and meet this definition of Incinerator.

In Connecticut, BMW is also included within the definition of "special wastes". Pursuant to RCSA Section 22a-209-1, "special wastes" means:

"the following wastes, so long as they are not hazardous waste pursuant to section 22a-115 of the General Statutes or radioactive material subject to section 22a-148 of the General Statutes: (1) water treatment, sewage treatment or industrial sludges, liquid, solids and

contained gases; fly-ash and casting sands or slag; and contaminated dredge spoils; (2) scrap tires; (3) bulky waste, as defined in this section; (4) asbestos; (5) residue; and biomedical waste."

On October 19, 2016, CT DEEP approved a Special Waste Disposal Authorization No. 01701245-SWDA (SWDA) for the Bristol Facility (see Appendix A) which authorized Covanta Bristol, Inc. to receive and dispose of various special wastes at the Facility. Among the approved special wastes were consumer products, certain industrial wastes, paints/solvents, paints, solvents, oil-contaminated waste and debris, and pre- and post-pharmaceutical waste. At the time, Covanta had not requested approval to receive and process BMW.

Consistent with the direction of CT DEEP, Covanta is not seeking a modification to the SWDA to add BMW to the list of authorized special wastes for the Facility. This Application seeks a separate approval to receive and process BMW at the Facility as detailed within.

Section 2.2 – Covanta Acceptable Biomedical Wastes

Covanta Bristol is requesting to accept, and process by incineration with energy recovery, BMW that includes Infectious Wastes, Pathological Wastes, and Chemotherapy Waste, defined in Connecticut regulations (Section 2.1) and as further described below.

BMW is untreated healthcare-related waste consisting of used and unused sharps, blood and bodily fluids, microbiological waste, renal dialysis waste, surgical waste, pathological material, non-hazardous pharmaceutical waste commingled with sharps, and trace chemotherapy waste, all of which result from the administration of healthcare services. There are many sources of medical wastes including hospitals, dental offices, veterinary clinics, and research institutes, among others.

Examples of non-hazardous BMW waste streams that will be accepted at the Bristol Resource Recovery Facility as part of Covanta's Biomedical Waste Program are listed below.

Acceptable Biomedical Waste Will Include, But Not Be Limited To:

- BMW that is untreated waste generated during the administration of medical care or the performance of medical research involving humans or animals;
- Infectious Waste;
- Pathological Waste; and
- Chemotherapy Waste.

Section 2.3 – Covanta Unacceptable Biomedical Wastes

Covanta will not accept the following BMW waste streams for disposal at the Bristol Facility:

Unacceptable Biomedical Waste Will Include:

- United States Environmental Protection Agency (USEPA) hazardous pharmaceutical waste;
- Human fetal tissue;
- Human remains;
- Large amounts of free-flowing liquids;
- Radioactive materials;
- Bulk pathological waste;
- Bulk chemotherapeutic waste; and
- Formaldehyde, iodine, or other preservative agents.

Section 2.4 – Pathogen Destruction in an MWC

Section 2.4.1 – Martin® GmbH Stoker MWC Technology

The MWC units at the Covanta Bristol Facility are an inherently effective technology for the combustion of BMW, including chemotherapy and pathological waste, and the thermal destruction of pathogens. The Martin® GmbH Stoker MWC technology, shown below in Figure 2.4.1, provides a 2-area approach to destroying pathogens, with Area 1 being the grate and Area 2 being the furnace volume above the grate. Combustion of MSW occurs in both Areas 1 and 2, which are described in additional detail below to enable an understanding of the behavior of medical waste and any associated pathogens or other infectious components.

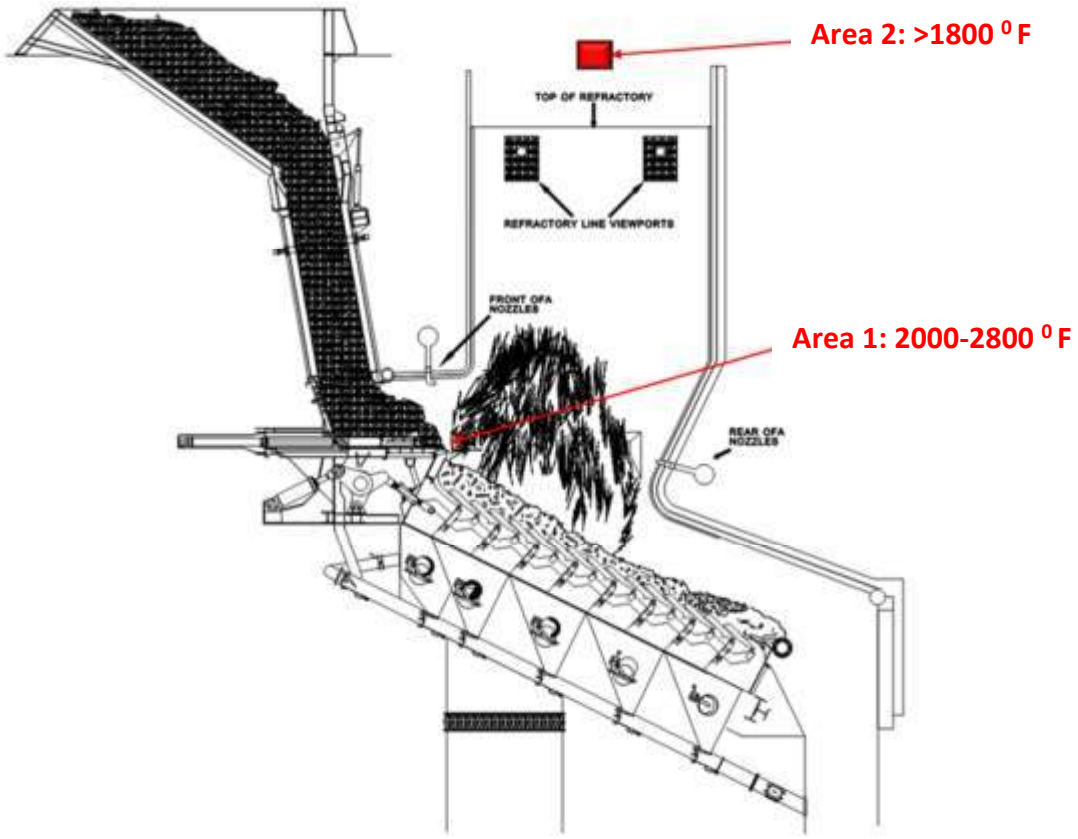

Figure 2.4.1 – Martin® GmbH Stoker Diagram

During normal operating conditions, Area 1 is the grate where MSW is dried, ignited, and combusted by heat provided by the furnace chamber as well as by radiant heat from the chamber walls. Moisture and volatile components in the waste are vaporized and are combusted immediately above the fuel bed. Each MWC unit includes an automatic combustion control system that automatically manages the waste feed rate and supply of combustion air to ensure proper combustion including compliance with USEPA's Good Combustion Practices (GCP) which consists of three parameters: carbon monoxide (CO), steam flow rate, and flue gas temperature at the baghouse inlet. BMW and MSW are comprised of similar major components (e.g., paper, plastic, cardboard); however, BMW contains limited quantities of infectious components. MSW and BMW are both effectively combusted for energy recovery on the grate.

Area 1 is the where the nominal residence time of MSW and BMW would be 45 minutes from the top to the bottom of the grate. Field measurements have demonstrated that the fuel bed temperature is between 2,000 degrees Fahrenheit (^{0}F) and 2,800 ^{0}F in the combustion zone. The flue gas temperature immediately above the fuel bed would be about 2,500 ^{0}F. Because BMW is carefully packaged in plastic and cardboard to prevent exposure to employees, the packaging is readily combusted, ensuring that BMW components inside the package are exposed to the high

temperatures associated with the MSW fuel bed. The 2,000 ^{0}F to 2,800 ^{0}F temperature MSW fuel bed is very conservative relative to temperatures normally associated with dry heat sterilization (250 ^{0}F and less depending on residence time).

Area 2 would also provide an effective and independent mechanism for thermal destruction of pathogens because the flue gas temperature immediately above the grate (2,500 ^{0}F) is gradually reduced to about 1,800 ^{0}F at the top of the refractory line in the furnace and 1500 ^{0}F -1,600 ^{0}F at the furnace roof.

A Time and Temperature Correlation Study was performed at the Bristol Facility in 1988 in conjunction with the CT DEEP Air Quality division to ensure proper combustion temperatures for polychlorinated dibenzodioxins and polychlorinated dibenzofurans (PCDD/PCDF) destruction. A copy of the summary of the Temperature Correlation Test Report is contained in Appendix B. The testing demonstrated that a flue gas residence time of 1 second at temperatures greater than 1,800 ^{0}F was maintained as is necessary for the destruction of PCDD/PCDF (Unit 1 – 1857 ^{0}F and Unit 2 – 1875 ^{0}F).

2.4.2 – FDEP Agency Review of MWC Technology to Combust BMW

In 2018, the FDEP conducted a technology review of the Covanta Lake County application proposing to combust BMW together with MSW in their MWC units. During this review, the FDEP reviewed the suitability of MWC units to combust BMW. See FDEP, March 6, 2018 Technical Evaluation & Preliminary Determination Report contained in Appendix C.

During their review, the FDEP determined that the temperature within the MWC combustion zone just above the grate system is designed to be more than 2,000 °F. This temperature will ensure that the organic content of the waste is vaporized and that pathological components are destroyed. This temperature also exceeded the minimum design requirement of 1,800 ^{0}F specified in Rule 62-296.401(4)(c)(1) of the Florida Administrative Code (F.A.C.) for Biological Waste Incinerators.

The FDEP's review considered information from the USEPA regarding Medical Waste Incinerators (MWI) and Municipal Waste Combustors.

Like MWCs, the USEPA explained that the primary purposes for MWIs are to:

1. Reduce the hazard associated with the waste, and
2. Reduce the volume and mass of the waste.

The USEPA further explained that this is accomplished by:

1. Exposing the waste to high temperatures over a sufficiently long period of time to destroy threatening organisms; and
2. Burning the combustible portion of the waste.

The USEPA noted that a controlled air MWI as shown in Figure 2.4.2 utilizes two zones with auxiliary burners to achieve flue gas temperature.

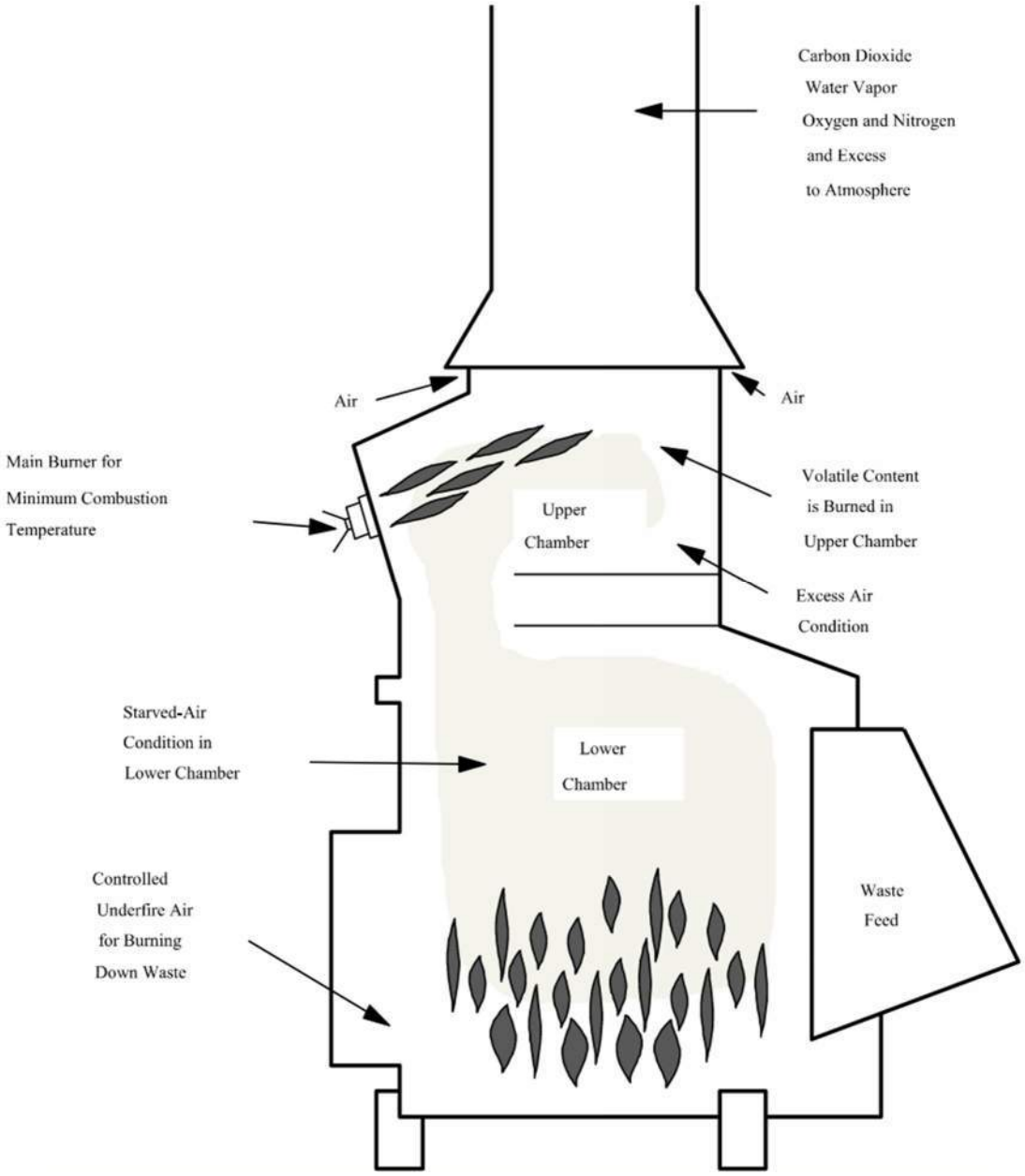

Figure 2.4.2 – Medical Waste Incinerator Diagram

The USEPA went on to recommend that MWIs follow the GCP utilized by MWCs including:

- Uniform waste feed;
- Adequate supply and good distribution of air in the incinerator;
- Sufficiently high incinerator gas temperatures at or above 1,800 ^{0}F;
- Gas (secondary chamber) residence time;
- Good mixing of combustion gas and air in all zones;

- Minimization of particulate matter (PM) entrainment into flue gas leaving the incinerator; and
- Control of the gas temperature entering the air pollution control system to 450 ^{0}F or less.

The FDEP concluded in their technology evaluation that pathogenic destruction occurs in an MWC's combustion process. The combustion of BMW that is co-fired with MSW material takes place in the furnaces. Additionally, gases which may contain pathogens pass through the SNCR systems with temperatures around 1,600-2,100 ^{0}F with a residence time of 1-2 seconds.

In comparison, MWI temperatures within a dual chamber unit have secondary chambers (afterburners) which operate between 1,600-1,800 ^{0}F. Residence times in secondary chambers (afterburners) are typically 1.0 second.

The FDEP went on to state that while BMW is different from MSW, the temperature and residence time in an MWC's combustion zone in the furnace and in the SNCR system should be more than adequate to provide complete pathogen destruction resulting in exhaust gases free of pathogens.

The FDEP issued its permit to Covanta Lake facility to combust BMW on March 27, 2018 (See Appendix C).

2.4.3 – California Medical Waste Management Act

The Environmental Management Branch of the California Department of Public Health (CDPH) implements the State's Medical Waste Management Program (Program) to protect the public and the environment from potentially infectious disease-causing agents. The generation, handling, storage, treatment and disposal of medical waste is regulated through the implementation of the California Medical Waste Management Act (Act) of 2017. Under the Program, all medical waste offsite treatment facilities and transfer stations are permitted and inspected.

In addition to treatment methods specifically allowed by the Act, there are alternative medical waste treatment technologies approved for use in California. Chapter 8 of the Act stipulates that in order to be approvable by the CDPH as a means of medical waste treatment, incinerators must provide for complete combustion of the waste into carbonized or mineralized ash. Treatment with alternative technology such as combustion in an MWC may be approved if the extremely high temperatures of treatment in excess of 1,300°F result in the destruction of pathogenic microorganisms.

On September 2, 2020, Covanta requested CDPH to evaluate MWC technology as an approved method of incineration of medical waste and/or approved alternative medical waste treatment technology. On September 14, 2020, the CDPH confirmed that the MWCs do qualify as an alternative medical waste treatment technology under the Act.

Section 3 – Biomedical Waste Management

Section 3.1 – National BMW Industry Issues

The BMW industry operates nine (9) MWI facilities in the United States that process components of the BMW stream. The limited number of MWI facilities causes BMW to be transported over long distances, creates inefficient handling of BMW, and creates logistical challenges with storage of BMW. Additionally, frequent and prolonged unscheduled outages and notices of violation at existing traditional MWI facilities create significant challenges for the BMW generators and service companies.

Consequently, BMW generators are seeking more stable, reliable, and sustainable solutions that provide guaranteed destruction of their waste streams. Covanta waste to energy (WTE) facilities in Oregon, Florida, and Alabama have permits that allow for the processing of BMW, and these facilities provide the generators of BMW with much needed processing capacity for the Pacific Coast and the Southern/Mid-Western United States. The Bristol Facility would provide Connecticut and Northeast with much needed processing capacity.

Section 3.2 – Regional Need for BMW Treatment and Disposal Capacity

The proposed processing of BMW at the Bristol Facility would provide much needed BMW processing capacity in the northeastern United States. As shown on Figure 3.2.1, BMW generators in the Northeast currently have components of their BMW stream transported hundreds of miles in order to reach licensed MWI facilities.

Figure 3.2.1 – Medical Waste Incinerator Locations

The population of Connecticut in 2018 was approximately 3,573,000 residents. The total quantity of BMW generated in Connecticut was estimated at 10,000 tons. The estimated quantity of chemotherapy waste and pathological waste generated in Connecticut (i.e., BMW which must be incinerated as per regulation 22a-209-15 (f)) was estimated to be 2000 tons per year. There is currently no thermal treatment facility in Connecticut, or any other state in the Northeast, to process BMW which must be incinerated. All this "Incinerate Only" waste, which is generated by Connecticut and regional healthcare facilities, must be transported hundreds of miles across multiple state lines to MWI facilities in Maryland, Ohio and North Carolina.

Covanta's proposed in-state BMW disposal solution at the Bristol Facility leverages an existing WTE facility with a proven Martin® Grate Stoker System coupled with advanced air pollution control (APC) technology. The final disposition of the BMW will be at the Bristol Facility, and the nonhazardous ash generated by the combustion of the waste will be managed at licensed RCRA Class D solid waste landfills, consistent with historic practices.

The Bristol Facility is currently permitted to receive and process a total of 716 TPD of MSW and Special Wastes as authorized by CT DEEP for an annual limit of 261,340 tons. The SWDA (see Appendix A) allows Covanta Bristol to accept and process no more than 57 TPD of special waste (8% of the 716 TPD limit), averaged over the course of one week, and receive no greater than 114 tons of special waste on any given day. In addition, a feed ratio of 8% special waste to 92% must be maintained when special waste is processed to ensure that the 57 TPD special waste processing limit is not exceeded.

The Bristol Facility intends to include BMW within its existing processing capacity and special waste limitations.

Section 4 – Covanta's Biomedical Waste Program

Section 4.1 – Covanta's BMW Experience

Covanta began processing BMW almost thirty years ago at its Marion County, Oregon WTE facility. In 2016, Covanta expanded its Marion County BMW program and BMW processing quantities with installation and operation of automated feed processing systems. In June 2016, Covanta began a new BMW program at its Huntsville, Alabama WTE facility and in September 2018, Covanta began processing BMW at its Lake County, Florida WTE facility.

BMW specific operating, maintenance, contingency and training plans have been developed and successfully implemented at these facilities. Based on this experience, similar plans have been developed for the Bristol Facility. These procedures are described in Sections 5.0 and 7.0 of this Project Narrative and Attachment K of the Application.

Section 4.2 – BMW Customers

Most of the BMW in the Covanta program comes from BMW service providers who service large quantity generators of BMW such as hospitals. BMW service providers typically have a fleet of trucks for route-based collection of BMW. Once collected, BMW is then transported to permitted transfer stations, consolidated and loaded onto transfer trailers for transportation to Covanta facilities.

BMW from medical wholesalers and distributors in the form of unused sharps, vaccines and medical devices that are not fit for distribution into the supply chain can be transported directly to one of Covanta's facilities permitted to process BMW. BMW from small quantity generators including doctors, veterinarians, and dentists, along with BMW from post-consumer sources, is normally transported to a transfer station or consolidation site before being shipped to a Covanta WTE facility permitted to receive BMW.

Section 4.3 – Covanta's BMW Compliance Assurance Program

Proper management and handling of BMW begins with the generator, who is responsible for the proper packaging of BMW prior to transport offsite. Once BMW is placed into a final package for disposal, it is difficult and unsafe for either the transporter or staff at the disposal facility to verify the acceptability of the contents by opening the packaging. Accordingly, Covanta has developed a robust Quality Assurance/Quality Control (QA/QC) program and auditing procedures for our BMW customers. These procedures are designed to assist our customers with proper BMW handling procedures and to minimize the potential for unacceptable material to be inadvertently delivered to the facility. A copy of these procedures is provided in Appendix D.

Covanta's QA/QC program adheres to a rigorous and documented process. The process begins with a conference call with the prospective customer to gather information about the company, its customers and their waste materials, packaging requirements, waste containers and other details.

Next, the prospective customer must complete a Material Characterization Form (MCF) for Covanta approval. This process informs a customer about supplemental requirements concerning source segregation and provides educational materials used at generator sites for waste segregation and packaging, as well as information about training and refresher course programs.

The next step in the process is an initial customer facility site visit by Covanta to review waste receiving, segregation, and repacking requirements and procedures. Any modifications that may be required to meet Covanta specifications, acceptable and unacceptable wastes and a service agreement would be discussed.

Before any BMW can be delivered to a Covanta WTE facility permitted to accept the material, all customers must execute a service agreement which includes added safeguards for compliance with our program by allowing Covanta to inspect any upstream customer facility that receives, processes or aggregates BMW to be delivered to a Covanta facility. After any required updates or follow-up visits are completed, all paperwork and the service agreement are submitted to Covanta for final approval.

Customer site audits are conducted by Covanta including a pre-approval audit, regularly scheduled recertification audits and a corrective action site audit, if required.

Staff at Covanta Bristol will conduct inspections of BMW shipments to ensure BMW is packaged, labeled, and marked in accordance with RCSA 22a-209-15(b) (4), (7) and (8). Discrepancies identified during load inspections will be reported to the customer. Reports will identify the root causes of discrepancies and requisite corrective actions to prevent future issues. Discrepancies may trigger load rejections, customer suspensions and customer corrective action site audits in addition to those periodically conducted by Covanta.

4.4 – Biomedical Waste Packaging

BMW is received packaged in sealed cardboard boxes, disposable containers, or reusable containers. Covanta operators will not manually open bags or boxes.

The packaging of BMW is based on regulatory requirements found at 49 CFR 172. The types of packaging illustrated below in Figure 4.4.1 are a general compilation of approved waste and container types. These packages are inspected for integrity, condition, labeling, and containment.

Reusable Container	Acceptable Waste
	**Sharps Container:** Blades, needles, broken glass, ampules, plastic.
	**Trace Chemo Container:** PPE Gowns, sharps, IV tubing.
	**Pharmaceuticals Container:** Pills, bottles, injectables, antibiotics, sharps.
	**Grey Macro/Blue Poly Bin:** Reusable bin that contains Infectious waste, blood products, IV tubing, cultures, stocks, contaminated PPE, gauze and dressings, non RCRA pharmaceuticals, trace chemotherapy waste.

Single Use Containers	Acceptable Waste
	**50 Lb Box:** May contain comingled items mentioned above.
	**Gaylord Box:** May contain comingled items mentioned above.
	**BYPA Box:** Overpack used for smaller pharmaceutical, trace chemo, and red sharps containers.

Figure 4.4.1 – BMW Containers

Section 5 – Project Description

5.1 – Operation and Management Plan for the Biomedical Waste Project

An O&M Plan for the management of BMW at the Bristol Facility is contained in Attachment K of the Application. The purpose of this O&M Plan is to 1) present the equipment and operational procedures that will be used to process BMW at the facility, 2) specify the environmental controls and safety measures will be used to comply with applicable regulatory standards and definitions, and 3) describe the training of personnel handling BMW on hazard recognition and risk mitigation. The O&M Plan for BMW was developed based upon Operating Plans at the other Covanta facilities combusting BMW as well as the information contained in this Application for the Bristol facility. The O&M Plan is focused on the safe handling and processing of BMW to ensure compliance with all safety, health and environmental regulations. Covanta reserves the right to reject any shipment of BMW deemed unsafe for processing. The site-specific O&M Plan for the Bristol Facility will be finalized after receipt of any comments from CT DEEP and will then be resubmitted within six (6) months of the first firing of BMW at the Facility.

5.2 – Biomedical Waste Receipt and Inspection Procedure

BMW will be delivered to the Facility by various BMW haulers, licensed in Connecticut, pursuant to RCSA 22a-209-15(g). All loads of BMW delivered to the Facility will be scheduled in advance. Trucks may be of a box truck type design or a tractor/trailered load. Upon arriving at the Facility, each vehicle will be weighed at the scale house located just inside of the security gate.

Like MSW trucks, BMW waste vehicles will be scanned for radioactivity at the scale house. A scale record will include the source (name of the hauler or cartage firm), origin, date, time, and quantity (tons) of the BMW. A Pre-Shipment Notification form provided with each individual delivery will also be signed as the certification of disposal/destruction of the waste. A signed copy of this form will be provided to the driver and another copy will be kept at the Facility for recordkeeping. Once weighed, each truck will be directed to the BMW/Special Waste Processing Area.

A flow diagram which depicts the proposed receipt and processing of BMW at the Bristol Facility is shown on Drawing M-100 in Attachment K of the Application. Depending upon availability, BMW drivers may be instructed to back up directly to one of the two loading docks to be located on the west side of the tipping floor building. In most cases, the driver will instead be sent to the designated BMW/Special Waste Truck Staging areas as shown on Drawing C-100 in Attachment K of the Application. The driver will be directed to park the trailer in an open parking slot and unhook the full trailer from the tractor. The driver will then be directed to

connect to an empty trailer and exit the facility. Trailers will be refrigerated units to ensure BMW is maintained in a non-putrescent state.

Covanta's staff will use a yard jockey truck to move full trailered loads from the staging area to the unloading docks as the docks become open. Empty trailers will also be moved out of the loading docks using the yard jockey truck and will be relocated to the truck staging area.

Each customer shipment must be accompanied by a Covanta BMW Load Certification document. On the Load Certification document, the customer certifies that the delivery accompanying the Certification contains only Biomedical Medical Waste, as defined in the Waste Disposal Agreement in effect with the customer, contains no Unacceptable Waste as defined in the Agreement and is not subject to regulations as hazardous waste under RCRA.

Additionally, Covanta will ensure that a Medical Waste Tracking form that meets RCRA 22a-209-15(h), Appendix I, accompanies the load. BMW deliveries will not be offloaded until all required shipment documents, including the Covanta BMW Load Certification, are signed and received at the Facility.

Trained staff at the Facility will perform thorough QA/QC inspections on BMW shipments using a prescribed Covanta QA/QC inspection form. This form may be in a paper or an electronic format. The QA/QC inspection form is used to ensure that the proper paperwork is accompanying the load, is used to document the condition of the load, and is used to document any discrepancies. Additionally, QA/QC inspectors will verify that BMW load meets RCSA Section 22a-209-15 (b) (4) for proper waste packaging, (7) for proper BMW labels, and (8) for proper Generator and Transporter information markings.

Discrepancies will be recorded by QA/QC staff which will then trigger customer notification and corrective action. Depending upon the severity of the exception, it may trigger a load rejection, customer suspension, and/or automatic inspection of the customer's site.

In the event of a leak or spill, the area immediately surrounding the waste shall be disinfected in accordance with the instructions of the disinfectant found in the BMW Process Area Spill Kit located on the west side of the process area. Vehicles used to transport BMW must have a spill kit which conforms with the requirements at RCSA 22a-209-15(e)(8). The required content of the spill kit includes absorbent material, disinfectant, bags, seals and labels, protective apparel, a fire extinguisher, a high intensity flashlight, and a first-aid kit. A spill kit which meets the specifications of RCSA 22a-209-15 will also be located at the Bristol Facility on the west side of the process area. In addition to the spill kit, the Facility will maintain a storage unit to segregate tools only to be used in the BMW Process Area, and not elsewhere in the Facility.

Trained staff with the proper personal protection equipment will perform the unloading of the trucks/trailered loads and loading of the Waste Feed System (WFS). As shown on Drawing M-100, shipments of BMW will be unloaded by forklift and staged near the WFS Tipping Floor Transfer conveyor, awaiting to be loaded. Otherwise, they will be stored in the future Waste Annex as shown on Drawing C-100.

BMW that arrives in reusable totes will be removed from the truck/trailer then emptied from the tote into a 4-sided enclosed WFS Bin using the forklift. As shown below in Figure 5.2.1, the 4-sided WFS Bins will be fabricated from ASTM A36 carbon steel that are seam welded and measure 60” x 60” x 72” high. The loaded WFS bin will then be staged or stored as described above. The empty totes will be loaded back into trucks/trailers for return to customer.

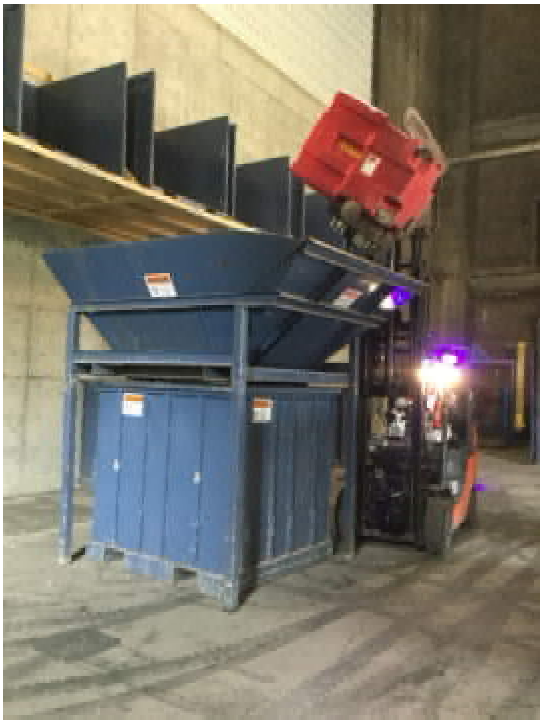

Figure 5.2.1 Contents of the reusable totes dumped into the 4-sided fully enclosed WFS bin.

The unpalletized BMW shipments as shown in Figures 5.2.2 and 5.2.3 will be manually unloaded within the trailer into 3-sided WFS Bins. The 3-sided bins will be fabricated from ASTM A36 carbon steel and measure 60" x 60" x 72" high. Forklifts will be used to move the WFS bins to the automated WFS or temporary storage in either the BMW/Special Waste Processing Area or in the future Waste Annex.

Figure 5.2.2 Un-palleted boxed BMW is loaded into 3-sided WFS bins within trailer

Figure 5.2.3 Example of 3-sided WFS bins

The future Waste Annex will be located to the south of the truck unloading docks, all located on the west wall of the existing tipping floor building (see Drawing C-100 in Attachment K of the Application). The Annex will provide intermediate storage of the BMW shipments in reusable totes, in palletized boxes, or waste loaded into the WFS bins. The future Annex will contain a pallet storage system to allow multiple pallets of BMW to be properly stored. Figure 5.2.4 shows a forklift storing pallets in the Annex.

Figure 5.2.4 Example of forklift loading in the Storage system in the Annex

After all BMW has been removed from the trailer, the yard-jockey will relocate the empty trailer to the staging/drop area. The next full trailer of BMW material will be brought to the loading dock.

The WFS will transfer individual bins of BMW up to either of the two (2) MWC feed hoppers for incineration.

5.3 – Biomedical Waste Feed System (WFS)

Covanta proposes to construct an automated, computer-controlled WFS to transfer BMW from the BMW/Special Waste Processing Area directly to the MWC units' waste feed chutes. This system is designed to minimize potential worker contact with the waste material. This controlled process has dedicated resources and trained personnel who process this waste. Figures 5.3.1-5.3.5 depict the WFS and show components of the BMW flow path within the Facility. Detailed drawings of the BMW WFS can be found in Attachment K of the Application. A floor plan of the BMW/Special Waste Processing Area is presented in Drawing No. M-200. Drawing M-201 is an elevation plan of the WFS.

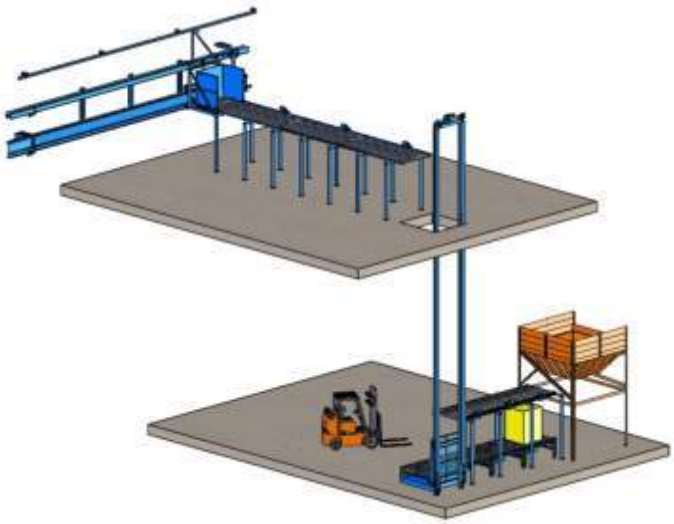

Figure 5.3.1 - Automated Waste Feed System

The forklift will load the WFS bins from the BMW\Special Waste Processing area onto the WFS Tipping Floor Transfer conveyor, located at tipping floor grade. This conveyor will then load the WFS elevator.

Figure 5.3.2 WFS conveyors at tipping floor grade elevation.
Example of forklift loading Tipping Floor Transfer conveyor.

The elevator system will vertically lift the WFS bin from the tipping floor elevation to the charging floor elevation.

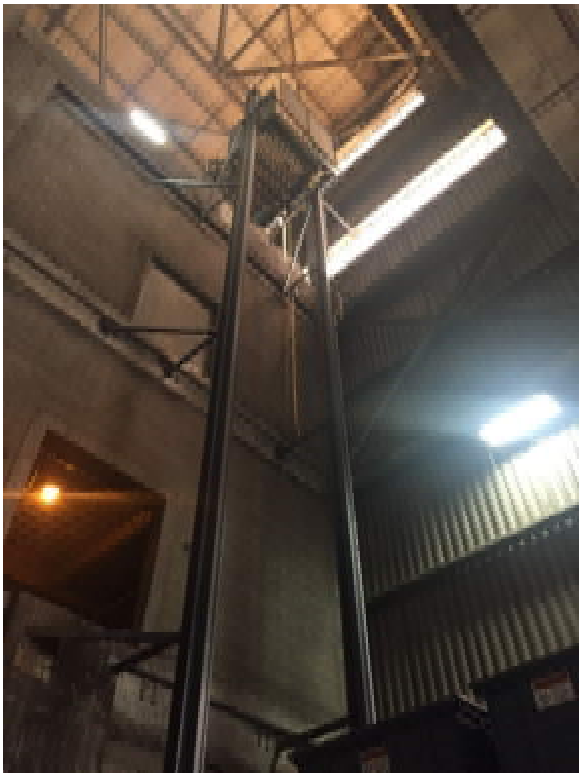

Figure 5.3.3 WFS Elevator Unit to transport full & empty WFS bins

At the charging deck level, the elevator will feed onto the horizontal Charging Deck Transfer Conveyor. This elevated conveyor allows for sequenced shuttling of full and empty WFS bins back and forth (see Drawing M-100 in Attachment K).

Figure 5.3.4 WFS Charging Deck Transfer Conveyor to move full & empty WFS bins

A plan of the charging deck level is shown on Drawing No. M-202. The charging deck conveyor loads the WFS bin onto the WFS dumper conveyor which transports the WFS bin and drops the waste into the selected MWC feed chute.

Figure 5.3.5 WFS Dumping mechanism feeding MWC feed chute

Once in the feed chute, the BMW will mix with MSW and feed by gravity down into the MWC furnace feed table that is integral to each MWC Unit. From the feed table, the waste will be hydraulically pushed into the combustion chamber described in Section 5.5 below.

The empty WFS bin will then return on these same conveyors/elevator back to the BMW\Special Waste Processing area and the cycle repeats.

5.4 – Covanta Bristol Special Waste\BMW Processing Rate

Covanta Bristol is currently permitted to receive and process 716 TPD of MSW and Special Waste as authorized by the Department, for an annual limit of 261,340 tons. The SWDA allows Covanta Bristol to accept and process no more than 57 TPD of special waste, averaged over the course of one week, and receive no greater than 114 tons of special waste on any given day. Covanta intends to include BMW as part of this special waste processing limit. The 57 TPD of special waste, including BMW, represents a maximum feed ratio of 8% special waste. All special waste and BMW loads must be scheduled. Weights of scheduled special waste and BMW trucks will be used to calculate a feed rate for the day to ensure permit conditions discussed above are met. The operators will load the MWC feed hoppers, alternating between loads of MSW, BMW, and special waste, to provide a consistent waste feed stream to the furnaces.

5.5 – MWC Waste Combustion System

The MWC units at the Bristol Facility utilize Martin® GmbH combustion. Figure 5.5.1 depicts the major components of the Martin® GmbH combustion system as described in detail below:

1. Waste feed hopper

2. Feeder

3. Reverse-reciprocating grate

4. Ash discharger

5. Furnace

6. Air preheater

7. Primary Underfire air supply

8. Secondary Overfire air supply

9. Roof camera

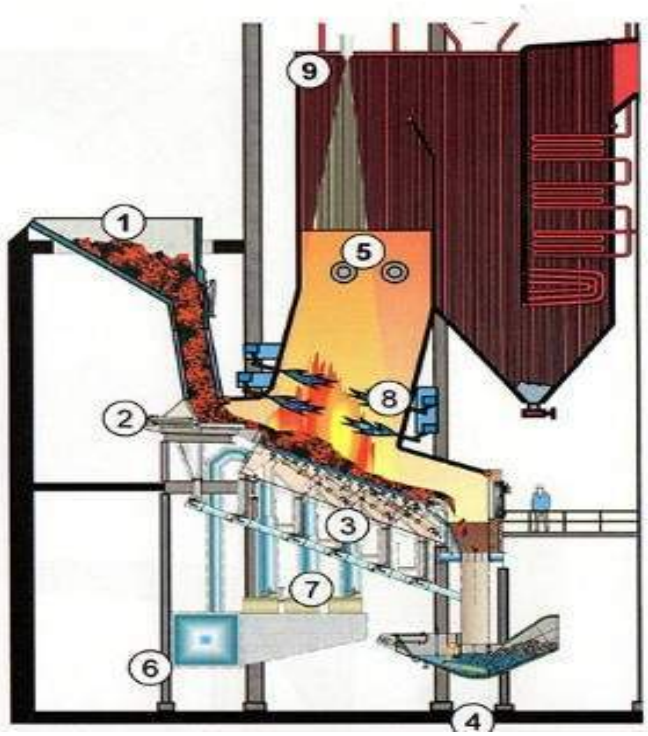

Figure 5.5.1 - Combustion System Components

5.5.1 – Feed Chute

The process begins when waste is loaded into the feed chute depicted at #1. The MSW is loaded into the feed chute from the storage bunker via a grapple crane. BMW will be introduced to the feed chute by way of the automated hopper feed system described in Section 5.3. The feed chute provides a waste column for feed rams underneath. It also provides an airlock to seal the furnace firebox from the atmosphere.

5.5.2 – Waste Feed Rams

From the feed chute, waste is metered into the combustion chamber by ram feeders depicted at #2. The feeder system consists of hydraulically driven feed rams that slide across a feed table to push waste out onto grates. The feeder system is automatically controlled by a combustion computer program that monitors critical combustion parameters such as oxygen levels, temperatures, and steam production rate within the boiler.

5.5.3 – Combustion Stoker Grate

The Stoker Grate system, depicted at #3, receives waste from the feeders and provide a surface through which air flows to the fuel bed for combustion. The grates, as shown in Figure 5.5.2,

provide intense stoking, or agitation of the fuel bed to assure complete combustion. The stroking forces the fuel at the bottom of the fuel bed upward against its natural downhill movement. This “Reverse-Reciprocating Action” continually mixes and agitates the bed ensuring complete combustion. Like the feed rams, the grates are computer controlled to ensure proper and complete combustion.

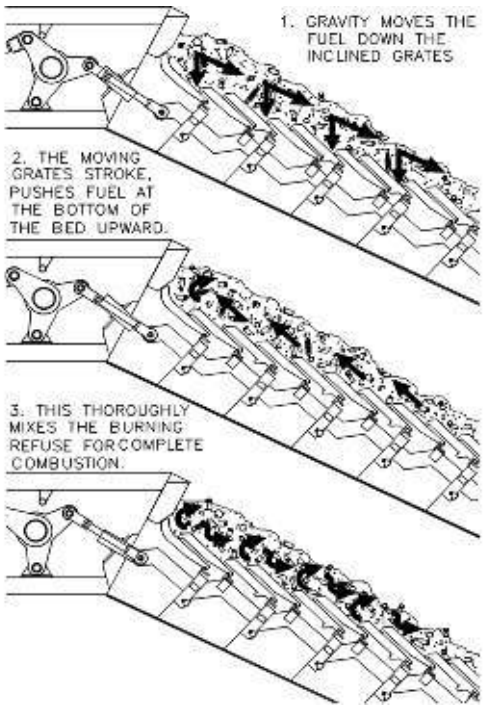

Figure 5.5.2 – Stoker Grate System

5.5.4 – Primary Underfire Air system

Preheated primary combustion air (also referred to as underfire air (UFA)) depicted at #7, flows up through the grates and waste into the combustion zone. The primary, or UFA, system as shown in Figure 5.5.3 provides computer-controlled amounts of combustion air into the furnace from beneath the grates via 5 zones. The UFA will be heated with air preheaters. Also shown on Figure 5.5.3 is the riddling system, which is located beneath the grate. The riddling system collects fine particles, or riddlings, that fall from the grate and feeder systems and transports them to the ash discharger.

Zone #1 is the first zone to receive fuel from the feeders. It dries the waste in preparation for combustion. Zone #2 and #3 include the alternately moving and stationary grate steps. This is the primary combustion area. Zones #4 and #5 is the area which finishes burning any combustibles that may remain in the fuel stream.

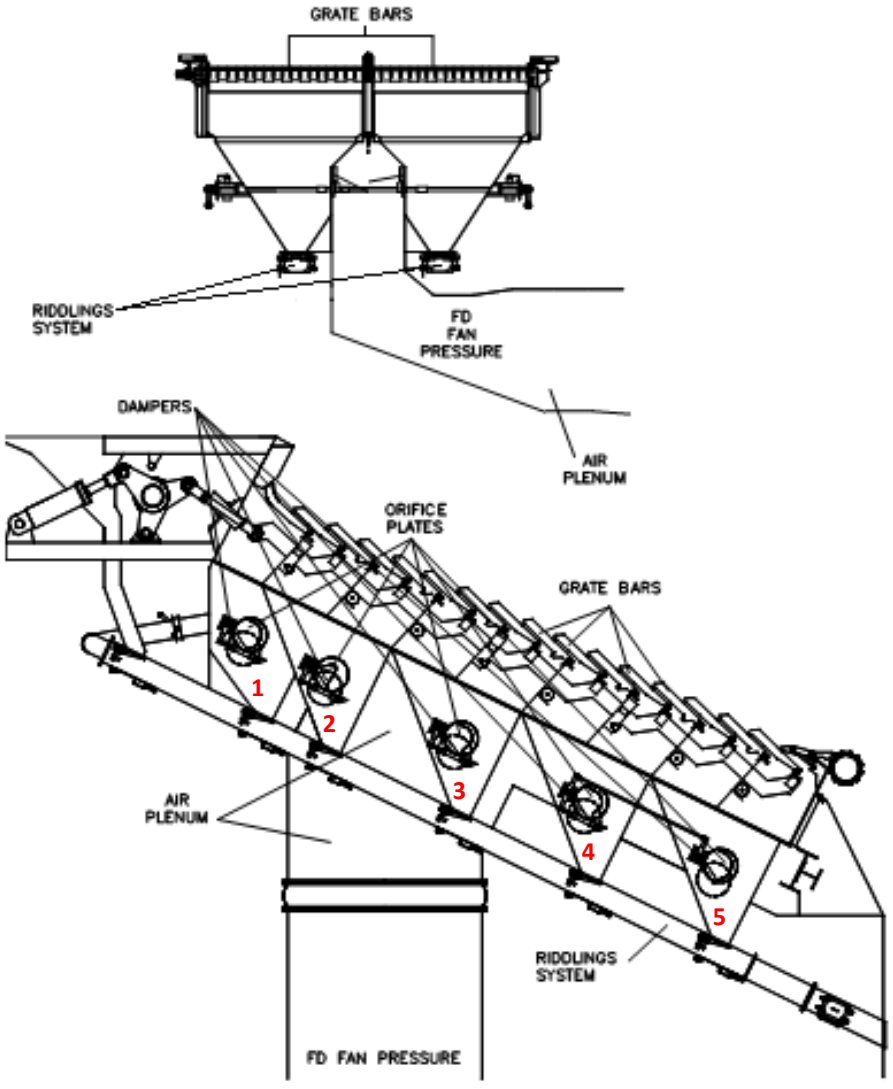

Figure 5.5.3 – Under fire Air System

5.5.5 – Secondary Overfire Air System

The secondary air or overfire air (OFA), depicted at #8, supplies the balance of combustion air to horizontal rows of nozzles. These nozzles, located on the front and rear walls of the fire box as shown on Figure 5.5.4, admit jets of air to the furnace. This air penetrates the flames rising from the fuel bed. The main purpose of the OFA is to provide oxygen and agitation to complete the combustion of gases released by the fuel that would otherwise escape.

The combination of the UFA and the OFA is supplied at rates to achieve complete combustion of the waste. The residence time of the waste on the combustion grate varies depending on multiple factors but is generally on the order of 45 minutes.

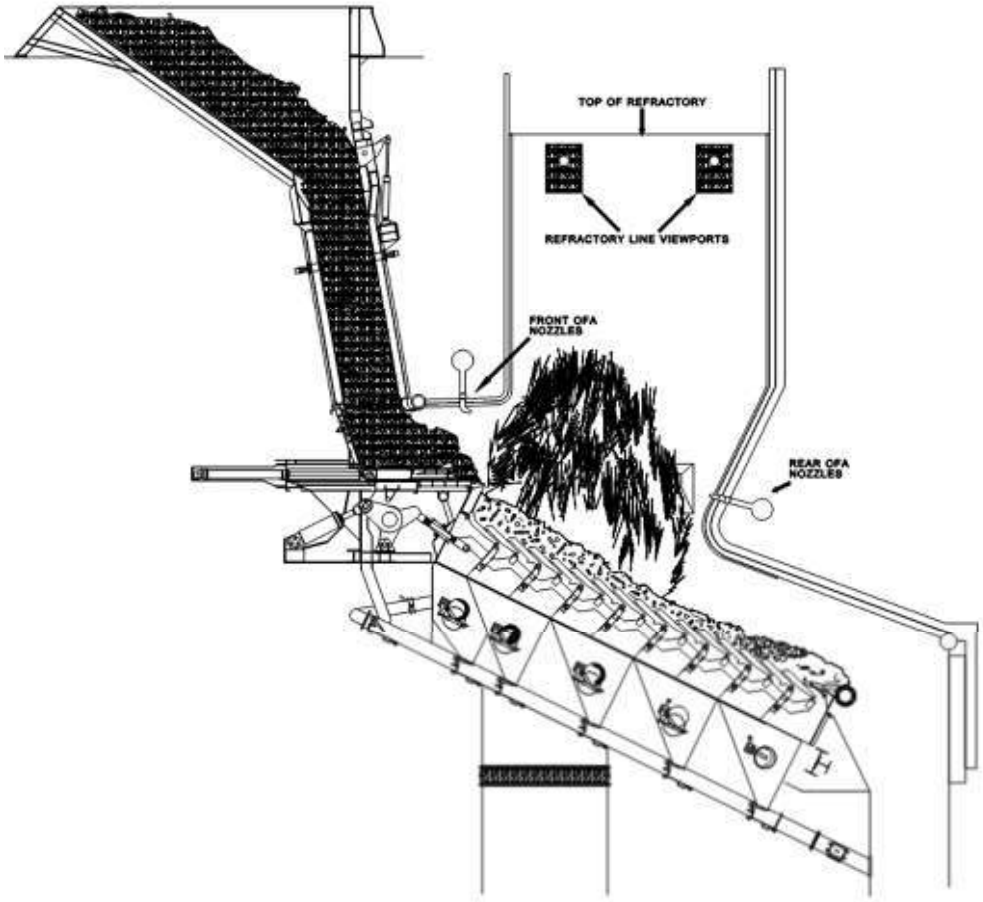

Figure 5.5.4 – Overfire Air System

As discussed above, the combustion rate is tightly controlled by the amount of air being supplied through the UFA and OFA systems. The temperature within the combustion zone just above the grate system is designed to be in excess of 2,000 °F. This temperature will assure that the organic content of the waste is vaporized and that pathological components are destroyed.

This temperature also exceeds the minimum design requirement of 1,800 °F for 1-second as discussed in Section 2.5.

The furnace is also equipped with auxiliary burners used for unit startup, shutdown and during operations as necessary to ensure proper temperatures are maintained.

5.5.6 – Ash Dischargers

Once the waste is completely combusted and reduced to combustion ash it drops via gravity off the end of the grate into the ash discharger depicted at #4. Like the waste feed chute, the ash discharger serves the dual purpose of evacuating combustion residue (ash) from the furnace while providing an airlock to prevent introduction of unwanted ambient air.

5.6 – Facility Ash Collection System

There are two types of ash created from the combustion process at the Facility: bottom ash and fly ash. Bottom ash is the ash that is collected from the end of the combustion grate. Fly ash is the ash that is collected in the APC system (and to a lesser extent in boiler hoppers).

Bottom ash is discharged from grates down into the Martin® ash discharger where it is quenched with water. Bottom ash is then periodically expelled from the ash discharger and conveyed to the Ash Storage Building. Cameras have been installed that monitor the ash system and the quality of the ash. At the Ash Building, metals are removed from the bottom ash and sent out for recycling. The remaining bottom ash is combined with the fly ash.

Fly ash is continuously collected and conveyed to the Ash Storage Building. In the Ash Storage Building, the fly ash is mixed with water for moisture conditioning. Fly ash is combined with the bottom ash to form combined ash.

Combined ash is loaded onto trucks for disposal at a permitted Subtitle D landfill. The combined ash exiting the Ash Storage Building is periodically tested using USEPA sampling protocols to verify that the waste is nonhazardous.

5.7 – Air Pollution Control System

The APC equipment for both MWC Units 1 and 2 consists of a spray dry absorber (SDA), FF baghouse, activated carbon injection system (ACI), and SNCR. The combustion zone of each boiler is equipped with auxiliary fuel (natural gas) burners to control combustion during periods of start-up, shutdown and malfunction/transient conditions. Continuous emission monitors (CEM) are installed in the outlet ducts of the boiler economizer and induced draft fan (post FF) before the flue gas exits out the stack.

The APC system for each combustion unit includes the following technologies:

1. SDA: The SDA uses a liquid lime slurry reagent to remove acid gases, sulfur dioxide (SO_2), hydrochloric acid (HCl), and hydrogen fluoride (HF), from the flue gas. It employs injection nozzles for spraying lime slurry into the flue gas stream. The lime slurry mixes with the flue gas in the SDA vessel to remove acid gases. The waste formed in the acid gas removal process is dry and is capable of being readily collected in the baghouse.

2. ACI: The ACI system is used for mercury and dioxin/furan removal. The system pneumatically injects activated carbon into the flue gas ductwork downstream of the boiler economizer. The mercury molecules attach to the carbon particles and then are removed from the flue gas downstream in the fabric filter baghouse.

3. FF: A pulse jet type baghouse is provided. The FF removes particulates from the combustion process including the fly ash from the furnace, lime and carbon injected into the gas stream and pollutants they remove.

4. SNCR: This process involves the injection of aqueous ammonia into the furnace of the boilers to react with the NO_x formation to drive the reaction from NO_x to molecular nitrogen (N_2), carbon dioxide (CO_2), and water (H_2O). The system consists of transfer pumps, piping, metering instruments and injection lances.

Air emissions from the Bristol Facility and from the Lake County Facility, with and without co-firing BMW, are presented in Section 6 of this Project Narrative.

Section 6 – Air Emissions

Section 6.1 – Emissions from the Bristol Facility

The Bristol Facility operates under a Title V Operating Permit (026-0055-TV) and New Source Review Permits (026-0027 and 026-0027) issued by the CT DEEP. The Facility is subject to applicable air regulatory requirements under Section 22a-174 of the RCSA, including Section 22a-174-38 for MWCs. The MWCs at the Bristol Facility are regulated as Large Existing MWCs in accordance with Title 40 of the Code of Federal Regulations (CFR) Part 60, Subpart Cb (Emission Guidelines and Compliance Times for Large MWCs That are Constructed on or Before September 20, 1994).

Under 40 CFR Part 60, Subpart Ce (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators), MWCs subject to 40 CFR 60, Subpart Cb are exempt from being subject to 40 CFR 60, Subpart Ce (See, 40 CFR 60.32e(e)). Thus, the addition of BMW to the MSW streams processed by the Bristol Facility will not change the federal requirements which apply to the MWC units under 40 CFR 60.

As discussed in Section 5.7, the Bristol Facility is equipped with state-of-the-art waste combustion technology including Martin® GmbH Stoker Combustion Control systems, combustion air preheaters, and auxiliary natural gas burners to provide for effective burnout of waste. The technologies used to control air emissions from the Facility include SNCR for reducing the emissions of NO_x, ACI for minimizing mercury and dioxin/furan emissions, SDA for neutralizing acidic gas emissions (i.e., SO_2, HCl, and HF), and FFs for capturing particulate emissions. As shown in Table 6.1.1 below, all these technologies combine to demonstrate emission levels from the Bristol Facility below regulatory emission limits.

Table 6.1.1 – Bristol Facility Air Emissions

Covanta Bristol Facility			
Pollutant	**MWC Cb Based Limits (@ 7% O_2)**	**2019 Emission Averages**	**2020 Emission Averages**
Particulate Matter (PM)	25 mg/dscm	2 mg/dscm	2.4 mg/dscm
Cadmium (Cd)	35 µg/dscm	1 µg/dscm	1.6 µg/dscm
Lead (Pb)	400 µg/dscm	8 µg/dscm	16.1 µg/dscm
Mercury (Hg)	28 µg/dscm	1 µg/dscm	1.6 µg/dscm

Covanta Bristol Facility			
Pollutant	**MWC Cb Based Limits (@ 7% O_2)**	**2019 Emission Averages**	**2020 Emission Averages**
Hydrogen Chloride (HCl)	29 ppmdv	4 ppmdv	9.7 ppmdv
Dioxins/Furans (PCDD/PCDF)	30 ng/dscm	0.3 ng/dscm	3.4 ng/dscm
Carbon Monoxide (CO)	100 ppmdv	17 ppmdv	21 ppmdv
Sulfur Dioxide (SO_2)	29 ppmdv	13 ppmdv	13 ppmdv
Oxides of Nitrogen (NO_x)	120/150 ppmdv	113/133 ppmdv	111/137 ppmdv

Acronyms: mg = milligrams, µg = micrograms, ng = nanogram, dscm = dry standard cubic meter, ppmvd = parts per million by volume, dry

Section 6.2 – MSW/BMW Combustion Emissions

Aside from the infectious aspect, the waste components and characteristics of BMW are very similar to MSW. Combusting BMW in MWCs is permitted at Covanta's Marion County facility located in Brooks, Oregon, Covanta's Huntsville facility located in Huntsville, Alabama, and Covanta's Lake County Facility located in Okahumpka, Florida.

The BMW program envisioned for the Bristol Facility will most closely resemble the program at the Lake County Facility. The Lake County Facility is the most recent of Covanta's facilities to permit and begin combusting BMW in MWCs, which allowed the design and operation of the Lake County Facility to incorporate the years of experience gained from operation of the Marion County and Huntsville facilities.

Both the Bristol Facility and the Lake County Facility incorporate the Martin® GmbH combustion control technology and have similar air quality control systems which include semi-dry scrubber systems with pulse jet FFs for control of acid gases, organics, and particulate, SNCR for reducing the emissions of NO_x, and ACI for minimizing Hg and dioxin/furan emissions. A copy of the Covanta Lake County BMW Permit is included in Appendix C.

Annual compliance stack testing of the MWC units at the Lake County Facility was undertaken in 2019 and January 2020 while co-combusting MSW and BMW. During the 2019 and 2020 tests, BMW represented 9% and 10% of the total amount of waste combusted, respectively. Official results of these stack tests are presented below in Table 6.2.1 along with average Lake County test results for the period 2016-2018 during which only MSW was combusted.

The test results from Lake County lead to two conclusions: 1) the combustion of BMW in quantities that do not exceed approximately 10% of the total fuel input did not result in an

increase in emissions; and 2) the emissions from Martin® GmbH combustors equipped with modern APC systems are consistently far below regulatory and permitted emission levels.

It is reasonable to expect that air emissions resulting from the co-combustion of up to 8% BMW with MSW at the Bristol Facility will be unaffected.

Table 6.2.1 – Lake County Test Results

Covanta Lake Emissions[1]					
Pollutant	**Permit Limit (@ 7% O2)**	**Prior 3-yr Average (without BMW)**	**2019 test (with BMW)**	**2020 test (with BMW)**	**2-yr Average (with BMW)**
PM	25 mg/dscm	0.95	1.16	1.0	1.08
Cd	35 µg/dscm	0.2	0.3	0.3	0.3
Pb	400 µg/dscm	2	4	2.2	3.1
Hg	50 µg/dscm	1.9	1.0	2.8	1.9
HCl	29 ppmdv	7.18	4.6	7.7	6.15
PCDD/PCDF	30 ng/dscm	2.39	1.5	0.7	1.1
CO	100 ppmdv	9	9.0	9.5	9.3
SO_2	29 ppmdv	1.2	1.0	10	5.5
NO_x	205 ppmdv	191	185	184	185

Acronyms: mg = milligrams, µg = micrograms, ng = nanogram, dscm = dry standard cubic meter, ppmvd = parts per million by volume, dry

Note 1 – Test results are in units identified by the emission limit.

Section 7 – Reasonable Assurance

Section 7.1 – Purpose of Section 7

The purpose of this section is to provide supporting information to reasonably assure the CT DEEP that the proposed treatment and disposal of BMW at the Bristol Facility will be accomplished in a manner protective of public health. This reasonable assurance is based upon plans, test results, installation of control equipment, or other information, which are designed so that the construction, expansion, modification, operation, or activity of the installation will not discharge, emit, or cause pollution in contravention of CT DEEP's standards or rules.

The proposed program of BMW processing at the Bristol Facility will most closely resemble the program being implemented at Covanta's Lake County Facility. A copy of the permit issued by the FDEP in March 2018 approving the processing of BMW at the Lake County Facility is contained in Appendix C.

Section 7.2 – Special Waste Processing Rate

As discussed in Section 3.2, Covanta will limit the amount of BMW and other special wastes processed at the Bristol Facility to: 1) 8% by weight of the total amount of waste received at the Facility, 2) 57 TPD on a weekly average basis, and 3) no more than 114 tons on any given day. To provide reasonable assurance of on-going compliance with these special waste processing limits, Covanta will continue to comply with the recordkeeping requirements contained in the PTO and the SWDA for the Bristol Facility. All special waste loads must be scheduled. Weights of scheduled special waste trucks will be used to calculate a feed rate for the day to ensure permit conditions are met.

The operators will load the MWC feed hoppers, alternating between loads of MSW and special waste to provide a consistent waste feed stream to the furnace. The volume of the automatic feed system will be designed to prevent overcharging, thereby assuring the complete combustion of the waste.

Section 7.3 – QA/QC Program to Ensure Shipments Meet Specifications

A robust QA/QC program (see Appendix D) has been established to minimize risk and ensure that all shipments of BMW to Covanta WTE sites meet specifications.

Components of the QA/QC program include:

- Completion of an MCF;
- Submission of extensive supplemental operational and generator related information for BMW approval;

- The execution of a BMW-specific service agreement which also includes a provision allowing Covanta to inspect any upstream BMW generator of our customer;
- Customer site audits consisting of an initial audit, a recertification audit and corrective action site audit if required;
- QA/QC inspections occur at the Covanta WTE facility for BMW load deliveries; and
- Discrepancies identified during load inspections are reported to the customer. Reports are used to identify a root cause of the discrepancy and implementation of corrective action.

Section 7.4 – Emissions Monitoring

7.4.1 – Continuous Emissions Monitoring Systems

The Facility is equipped with a state-of-the-art CEM system to continuously extract and analyze exhaust gases to monitor for complete combustion, including the following compounds: CO, SO_2, NO_x, oxygen (O_2), and CO_2. The CEM system is calibrated on a daily, quarterly, and annual basis using prescribed USEPA QA/QC procedures. Measurements made by the individual gas analyzers are transmitted to a Data Acquisition System (DAS) where they are calculated into the appropriate averaging periods prescribed by the Title V Operating Permit for the Facility and underlying regulations. Also, at the request of local environmental groups, as part of this BMW project, Covanta will propose a means of continuously measuring mercury emissions in a subsequent application to modify the air permit for the Facility.

7.4.2 – Annual Stack Testing

Annually, the Facility is required to conduct a compliance test (or "stack test") to demonstrate compliance with the emissions limits imposed by 40 CFR 60, Subpart Cb and the CT DEEP. The BMW rate during stack testing will establish the BMW rate until the next successful stack test. The following pollutants are sampled and analyzed using methods prescribed by the Title V Operating Permit and the underlying regulations: PM, PCDD/PCDF, HCl, Pb, Cd, and Hg. Covanta will ensure that BMW is being combusted during the annual compliance test at a rate that equals or exceeds the highest documented rate from the preceding 12-month period.

Section 7.5 – Design Parameters

7.5.1 – Combustion Conditions

As summarized in Section 2.4, the Covanta facilities at which BMW is combusted together with MSW must maintain a minimum combustion zone temperature of 1,800 °F for a residence time of 1 second when BMW is being combusted.

A study conducted at the Bristol Facility in October 1988, witnessed by CT DEEP, demonstrated that temperatures exceeded 1800 ^{0}F (Unit 1 1857 ^{0}F and Unit 2 1875 ^{0}F) for a residence time of longer than 1 second (see Appendix B).

7.5.2 – Air Lock System

The mechanically fed waste combustion units incorporate an air lock system to prevent opening the unit to the room environment. The waste feed chute and the ash dischargers ensure the furnace is sealed from the outside at both the waste inlet and residue outlet locations.

Section 7.6 – Operating Practices

Covanta will implement several operating practices to ensure that firing BMW with MSW at the Bristol Facility will be conducted in a safe and compliant manner. A list of these practices includes the following:

7.6.1 – Best Management Practices

To ensure good mixing with MSW, operators shall use best management practices when combusting BMW together with MSW as defined in the BMW Training Plan (see Section 7.10) and the O&M Plan (see Attachment K of the Application).

7.6.2 –MWC Unit Startup, Shutdown, and Malfunction Procedures

The firing of BMW will not be done during startup or shutdown periods of an MWC unit. Units must be online for a minimum of 4 hours and have stable combustion before feeding BMW. All air preheater coils will be in operation prior to starting the feed of BMW to an MWC unit and will be operated continuously during the combustion of BMW. The introduction of BMW to a unit shall not begin until the furnace combustion temperature requirement is attained. All APC equipment and CEM equipment will be operational and functioning properly prior to the introduction of BMW to a unit. If a malfunction occurs, BMW feed will cease and not restart until the malfunction has been rectified.

Section 7.7– BMW Feed System

An automated hopper feed system will be constructed to transfer BMW from the tipping floor directly to the waste feed chutes of MWC Units 1 and 2.

Section 7.8 – Good Combustion Practices

All the combustibles in the BMW placed into the furnace must be completely combusted prior to removal from the furnace for further processing, such as ash handling and landfilling. The Bristol Facility will continue to operate utilizing the GCP included in 40 CFR 60, Subparts Cb/Eb including CO limits, steam flow limits and fabric filter inlet temperature limits.

Section 7.9 – Emission Standards and Limitations

The emission standards for Emission Units Nos. 001 & 002, MWC Unit Nos. 1 & 2, contained in the Title V Operating Permit for the Facility are not changed under this project.

Section 7.10 – Training Program

Training is an essential component of the Covanta BMW program and mitigates the risk of exposure to any of the hazards associated with the processing of BMW. Initial operator training will be conducted by a competent individual for any employee who will be working directly with BMW prior to performing the functions of this job. Recurrent training will be provided on an annual basis.

Operators of the Bristol Facility have been trained in accordance with the Municipal Waste Combustor Operator Training Program developed by the USEPA in support of improving the air pollution control practices at MWCs. The USEPA was required to develop a model state training and certification program for solid waste incinerator operators under Title 111 of Section 129 of the Clean Air Amendments of 1990. In accordance with State of Connecticut regulations, all chief and shift operators are required to be certified by the Commissioner. Operators must satisfactorily complete an operator training course conducted by the Commissioner.

Given the potentially infectious characteristics of some BMW, it is important that facility operators be properly trained and qualified prior to any combustion of BMW at the Facility. Although the federal Hospital, Medical, and Infectious Waste Incinerator (HMIWI) rules do not apply to the MWC units co-fired combustors at the Facility, Covanta asserts that the training requirements of 40 CFR 60.53c(c) for HMIWI are appropriate for inclusion in a training program for combusting BMW at any of its facilities.

At least 90 days prior to any combustion of BMW at the Bristol Facility, Covanta will submit to CT DEEP for approval, a comprehensive training program that covers the following topics required by 40 CFR 60.53c(c) that includes, at a minimum, the following provisions:

(a) 24 hours of training with facility staff on the following subjects:
   - (i) Environmental concerns, including pathogen destruction and types of emissions;
   - (ii) Basic combustion principles, including products of combustion;
   - (iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;
   - (iv) Combustion controls and monitoring;
   - (v) Operation of air pollution control equipment and factors affecting performance;
   - (vi) Methods to monitor pollutants and equipment calibration procedures;
   - (vii) Inspection and maintenance of the waste handling equipment, combustion equipment, air pollution control devices, and continuous emission monitoring systems;
   - (viii) Actions to correct malfunctions or conditions that may lead to malfunction;

(ix) Ash characteristics and handling procedures;
(x) Applicable Federal, State, and local regulations;
(xi) Work safety procedures;
(xii) Pre-startup inspections; and
(xiii) Recordkeeping requirements.

(b) Distribution of reference material to the attendees covering the course topics.

(c) An examination designed and administered by the instructor given to trainees to ensure they have been properly trained.

The training program which includes the Best Management Practices (BMPs) for the handling, storage and co-firing of BMW at the Facility will be submitted to the agency 90 days prior to the first firing of BMW in the MWC units. The training program and BMPs will be kept onsite and made available for inspection upon request.

Section 8 – Benefits of the Proposed Covanta Bristol BMW Program

The proposed addition of BMW to the list of wastes that can be processed at the Bristol Facility will provide many benefits to biomedical waste generators and the local community. These benefits are described below as follows:

Capacity: The proposed Covanta Bristol program can provide much needed BMW disposal capacity for Connecticut healthcare facilities and the northeastern United States. In Connecticut, it is estimated that approximately 20 million pounds of BMW is generated per year. Currently, there is no thermal treatment option for "incinerate only" medical waste within the State of Connecticut. All "incinerate only" medical waste generated by Connecticut regional healthcare facilities and other industries must be transported hundreds of miles across multiple state lines to incineration facilities in Maryland, Ohio, and North Carolina.

Having an effective BMW processing program at Covanta's Bristol Facility would reduce disposal costs and risks for Connecticut healthcare facilities by eliminating the need to transport their medical waste long distances to disposal facilities which frequently experience service interruptions.

Safety: Covanta has the highest level of safety in the BMW industry. Its facilities are part of OSHA's Voluntary Protection Program (VPP) and have standard operating and safety procedures specific to receiving and processing BMW.

Reliability: By having two (2) MWC units at the Bristol Facility permitted to combust BMW with MSW, the proposed project will provide consistent capacity to the marketplace by minimizing the risk of service interruptions that are common at medical waste incinerators in today's BMW waste market.

Sustainability: Covanta is the only company in the United States that can supply steam and electricity and recycle metal from processing BMW. The implementation of the proposed project will result in a reduction in greenhouse gas emissions from the long-haul transport of BMW from the Northeast to its alternative disposal locations.

Host Community benefits: The proposed Covanta Bristol BMW program will provide a benefit to the "host community" from the proposed expansion of operations at the facility. The City of Bristol supports this proposed project and its benefits and has agreed to a new host benefit agreement specific to this proposed project. Letters of support for the proposed project from the City of Bristol to CT DEEP are contained in Appendix E.

Experience: Covanta has over 30 years of experience and knowledge processing BMW at three (3) of its existing WTE facilities, knowledge that will be transferred to the proposed program at the Bristol Facility.

Appendix A

Bristol Special Waste Disposal Authorization

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

SPECIAL WASTE DISPOSAL AUTHORIZATION

Name of Facility:	**Covanta Bristol, Inc.**
Address:	**170 Enterprise Drive Bristol, CT 06010**
Permittee:	**Covanta Bristol, Inc**
Contact Person:	**Tonya MacKenzie**
Application No.	**201401368**
Authorization No.	**01701245-SWDA**

Pursuant to Section 22a-208y of the Connecticut General Statutes ("CGS"), the Commissioner of Energy and Environmental Protection ("Commissioner") hereby authorizes Covanta Bristol, Inc. ("Permittee") to receive and dispose of various types of special waste at the resources recovery facility located at 170 Enterprise Drive, Bristol CT ("Facility"). Such receipt and disposal shall be conducted in accordance with the document entitled *Covanta Bristol, Inc. Plan for the Acceptance and Disposal of Special Waste* ("the Plan") and attached hereto.

Nothing herein authorizes the Permittee to violate any terms or conditions of any authorization or license regulating the activities authorized therein.

Nothing in this authorization shall affect the Commissioner's authority to institute any proceeding or to take any actions to prevent violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law. Nothing in this authorization shall relieve the Permittee of other obligations under applicable federal, state and local laws.

Nothing herein authorizes any person, municipality or authority to hinder municipal or regional solid waste recycling efforts. The Permittee shall ensure all regulated activities conducted at the Facility are done so in compliance with all applicable licenses and authorizations.

The Permittee shall not exceed the limits specified in the permits issued through the Bureau of Air Management regulating the combustion of Special Waste in the three (3) municipal waste combustor units at the Facility.

The Permittee shall ensure that all activities conducted at the Facility are consistent with Connecticut's 2016 *Comprehensive Materials Management Strategy*.

This authorization shall expire simultaneously with the Permit to Operate No. 01701072 issued on November 20, 2013 which shall expire on November 20, 2023. This authorization may be revoked, suspended, modified, or transferred in accordance with law. No later than ninety (90) days prior to the expiration of this authorization, the Facility shall submit a request for renewal of this authorization. Upon timely submission of a sufficient renewal request, the Commissioner

may extend this authorization until such time as the Commissioner approves or denies the renewal request. Such request shall include: an "Authorization Application for Disposal of Special Waste (including Asbestos)" (DEP-WEED-APP-200); a Special Waste Disposal Plan; a cover letter detailing all modifications sought identified by section and page number; the appropriate processing fee; and shall be accompanied by any other information deemed necessary for the Commissioner's review and approval.

This authorization supersedes and replaces the Special Waste Disposal Plan Approval, Approval No. 0170822-SWDA, issued May 21, 2009 to the Facility for special waste that meets the criteria of the Plan.

Issued on this 19th day of October, 2016.

By _____
Yvonne Bolton
Chief
Bureau of Materials Management and
Compliance Assurance

Administrative Notes
Application No.: 201401368
Authorization No.: 01701245-SWDA
Certified Mail #:

COVANTA BRISTOL, INC.
PLAN FOR
THE ACCEPTANCE AND DISPOSAL
OF
SPECIAL WASTE

Application No. 201401368
Approval No. 0170....-SWDA

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Covanta Bristol, Inc.
Special Waste Disposal Authorization Plan

SECTION I

GENERAL FACILITY PROCEDURES

SECTION I
GENERAL FACILITY PROCEDURES

A. REGULATORY AUTHORITY

Section 22a-208y of the Connecticut General Statutes ("CGS") authorizes the Commissioner of the Connecticut Department of Energy and Environmental Protection ("the Department") to review and approve a Special Waste Disposal Plan ("Plan") submitted by a Resources Recovery Facility ("Facility") for acceptance and disposal at the Facility of categories of waste or special waste as defined in the CGS and the Regulations of Connecticut State Agencies ("RCSA"). The Permittee shall ensure that the Facility is operated in compliance with Sections 22a-174-2a and 22a-174-3a of the Regulations of Connecticut State Agencies, with all federal, state and local laws and any permits or authorizations issued thereunder. Nothing herein authorizes the Permittee to violate any terms or conditions of any authorization or license regulating the activities authorized therein.

B. FACILITY INFORMATION

1. **Facility:** Covanta Bristol, Inc.
   170 Enterprise Drive
   Bristol, CT 06010
   Phone No. (203) 589-6470

2. **Permittee** Covanta Bristol, Inc.

3. **Operator:** Covanta Bristol, Inc.

4. **Contact Information:** Name: Tonya MacKenzie.
   Telephone No.: (203) 589-6470 Ext. 213
   TMacKenzie@covanta.com

5. **Equipment Description**
   The Facility's combustion system consists of two (2) incinerator/boiler units, permitted to process for energy recovery a total of 716 tons per day (TPD) of solid waste as defined in CGS Section 22a-207.

6. **Special Waste On-Site Combustion**
   The Permittee shall ensure that:

   a. No more than 57 TPD of special waste, averaged over the course of one week, is received at the Facility. For the purposes of this Plan, one week shall mean 12:00 a.m. (midnight) Saturday through 11:59 p.m. the following Friday. The Permittee shall also ensure that on any given day, the Facility accepts no greater than 114 tons of special waste.

   b. No more than 57 TPD of special waste is processed through combustion at the Facility. A feed ratio of 8% special waste to 92% authorized municipal solid waste (MSW) shall be maintained when special waste is processed through the boiler(s) and the Permittee shall ensure that such feed ratio does not result in greater than 57 TPD processed through the boilers.

c. The receipt of special waste at the Facility does not result in an exceedance of the total permitted processing and storage capacities authorized through Permit to Operate No. 01701072-PO or as it may be amended.

d. The receipt of special waste at the Facility does not displace contracted municipal solid waste to be received from Connecticut municipalities.

C. PERMIT INFORMATION

Operating Permit Numbers

Solid Waste Permit to Operate No.:	01701072-PO issued November 20, 2013
Air Permits to Operate Nos.:	026-0055-TV issued on August 21, 2015
	026-0026 issued August 29, 2010
	026-0027 issued October 11, 2006

Note: Air pollution control equipment, as well as various design and operational parameter limits are specified in the permits issued by the Air Management Bureau [i.e.: design higher heating value (HHV), of incinerated waste; maximum firing rate (tons/hour/boiler); maximum allowable heat input rate (British Thermal Units/boiler); maximum steam generation (pounds/hour/boiler); etc.].

D. DEFINITIONS

For the purposes of this Plan, terms shall be defined as specified in the current Permit to Operate identified above, with the exception of the following terms which shall be defined as follows:

1. "Special wastes" means the following wastes, which may not be hazardous waste pursuant to CGS Section 22a-115 or radioactive material subject to CGS Section 22a-148: (1) water treatment, sewage treatment or industrial sludges, liquids, solids and contained gases; fly-ash and casting sands or slag; and contaminated dredge spoils; (2) scrap tires; (3) bulky waste, as defined in Section I.D.2 below; (4) asbestos; (5) residue; and (6) biomedical waste, as defined in RCSA Section 22a-209-1. All wastes authorized herein for disposal shall be deemed special wastes.

2. "Bulky waste" as defined in RCSA Section 22a-209-1, means landclearing debris and waste resulting directly from demolition activities other than clean fill.

3. "Construction and demolition waste" as defined in RCSA Section 22a-208a-1(a)(13), means the waste building materials or packaging resulting from construction, remodeling, repair or demolition operations on houses, commercial buildings, and other structures, excluding asbestos, asbestos fill as defined in regulation adopted under section 22a-209 of the general statues, or solid waste containing greater than de minimus quantities, as defined by the commissioner of environmental protection, of (A) radioactive material regulated pursuant to section 22a-148 of the general statutes, (B) hazardous waste as defined in section 22a-115 of the general statutes, and (C) liquid and semi-liquid materials including but not limited to adhesives, paints, coatings, sealants, preservatives, strippers, cleaning agents, oils and tars.

4. "Day" shall mean 12:00 a.m. through to 11:59 p.m. of one full calendar day.

5. "Processed Construction and Demolition Wood", as defined in CGS Section 22a-208x(a)(2), means the wood portion of construction and demolition waste which has been sorted to remove

plastics, plaster, gypsum wallboard, asbestos, asphalt shingles, regulated wood fuel as defined in section 22a-209a and wood which contains creosote or to which pesticides have been applied or which contains substances defined as hazardous waste under CGS Section 22a-115.

6. "Waste stream" means a special waste generated from a single source or process, and may consist of two (2) or more special wastes that are comprised of the same materials. Such waste streams are generated from equivalent sources or processes by a generator located at a specific site.

E. SPECIAL WASTE CATEGORIES

Special wastes to be accepted and disposed at the Facility, including wastes generated at the Facility shall be limited to the following:

1. **Commodity Wastes (Consumer Products):** MSW derived from consumer products that require special handling. This category includes packed liquid consumer products (e.g., bottled shampoo, cough syrup, etc.).

2. **Paint/Plastics/Rubber Wastes:** Paint, paint related debris, foam rubber, polystyrene foam, adhesives, polymers, latex, resins, and/or other similar materials or commodity items that predominantly contain these materials.

3. **Oil/Petroleum Product Contaminated Wastes and Debris:** Rags, paper, absorbents (i.e., diatomaceous earth, clay, polypropylene, "oil dry" material, etc.), oil filters that are not used oil per 40 CFR 279, and/or similar materials. Connecticut Regulated Waste (CRW) liquid categories such as CR01 (PCBs), CR02 (Waste Oil), and CR03 (Waste Water Soluble Oil) are not authorized for disposal under this Plan.

4. **Industrial Wastes:** Sludges, manufacturing debris, production wastes, including off-specification products and rags used for degreasing which may be contaminated with solvents, and/or other similar materials which may be categorized as CR04 or CR05 wastes.

5. **Pharmaceutical Wastes (Pre-consumer):** Non-RCRA regulated medications, over-the-counter or by prescription that are expired or discarded; off specification (not made to specification); not suitable for use or sale; and/or other similar materials.

6. **Pharmaceutical Wastes (Post-consumer): P**harmaceuticals generated by homeowners and collected at permanent household hazardous waste collection locations, authorized one day collection events, and collection drop-boxes located at local or state law enforcement department locations. Any post-consumer pharmaceuticals collected would meet the RCRA exemption for household hazardous waste.

7. **Printing Wastes:** Ink solids, ink debris, and solid waste containing inks and/or other similar materials.

8. **Processed Screenings From Sewage Treatment Facilities:** Screenings generated through the removal of non-organic solids from the headworks of sewage treatment facilities. Prior to acceptance at the Facility, such screenings shall be dewatered.

9. **Wood Debris derived from Processed Construction and Demolition Waste:** The wood portion of construction and demolition waste which has been sorted to remove plastics, plaster, gypsum wallboard, asbestos, asphalt shingles, regulated wood fuel as defined in CGS Section 22a-209a and wood which contains creosote or to which pesticides have been applied or which

contains substances defined as hazardous waste under CGS Section 22a-115, as defined in CGS Section 22a-208x(a)(2) and as defined in Section I.D. of this Plan above. Pressure treated lumber; telephone poles; railroad ties or wood containing copper, chromium and arsenic (a.k.a CCA lumber) shall not be accepted at the Facility.

10. **Contraband Wastes:** Items of evidence (previously confiscated by law enforcement personnel) such as controlled substances, counterfeit consumer items, and/or other similar materials. Contraband Wastes may also be identified as Materials for Secure Destruction, in accordance with Section I.E.12. of this Plan.

11. **Agricultural Wastes/Quarantined Wastes:** Agricultural or biogenic material that requires destruction, including material gathered for the control of invasive species collected in a state and/or local program. Such material may include, but may not be limited to, plants, animal carcasses and quarantined wastes which may be derived from domestic and international travel and/or cargo.

12. **Materials for Secure Destruction:** Includes, but may not be limited to, paper documents and items that are designated for recycling pursuant to CGS Section 22a-241b, but that require secure destruction and for which the generator provides in writing a justification for not recycling such recyclables.

13. **Autoclaved Waste:** Non-hazardous autoclaved wastes originating from medical waste treatment facility processes and rendered inert in accordance with RCSA Section 22a-209-15(f)(6). Wastes not authorized herein include but may not be limited to: pathogenic wastes; infectious wastes; sharps; body parts; or wastes generated through the administration of chemotherapeutic agents. Only biomedical waste, as defined in RCSA Section 22a-209-15, that has been rendered inert in accordance with RCSA Section 22a-209-15(f)(6) may be accepted at the Facility for destruction.

F. WASTE PROFILING REQUIREMENTS

The Permittee shall require the generator submit, for the Permittee's evaluation and approval, a description of their special waste, including: how it was generated; its components; a Safety Data Sheet ("SDS") document, if available; and a certified laboratory analysis (when applicable). The minimum testing parameters that apply to each category of special waste are specified in the "Minimum Testing Parameters for Initial Characterization/Acceptance of Special Waste at a Resources Recovery Facility" (Attachment A). The "Maximum Concentration of Contaminants for the Toxicity Characteristics (TC) (40 CFR 261.24)" (Attachment B) lists the toxic parameters pursuant to subpart 261.24, Title 40 of CFR. The analytical testing will ensure that no special waste, considered to be a hazardous waste in accordance with CGS Section 22a-115, RCSA Section 22a-449(c)-100 and/or subpart 261, Title 40 of CFR is received at the Facility. In order to evaluate if a specific special waste is suitable for disposal at the Facility, the following information shall be provided by the generator for each type of waste stream proposed for disposal at the Facility under this Plan.

1. **General Waste (GW) Initial Characterization Information**
   The Permittee shall require the generator submit, for the Permittee's evaluation and approval, initial characterization of the GW information listed below. The Permittee shall require such information be provided by the generator prior to receipt of any special waste stream previously not accepted and/or provided whenever there is a change in information, materials used, and/or generating process that would alter the characteristics of the special waste.

a. Generator contact name and telephone number.

b. The origin and category of special waste to be shipped for disposal.

c. A description of the special waste, including but not limited to, a description of how the special waste is generated.

d. Laboratory analysis completed with at least the minimum testing parameters as specified in Attachment A, when applicable.

e. Physical and chemical characteristics of the special waste.

f. Packaging information (container type and delivery method).

g. The amount of special waste to be delivered and frequency of delivery.

h. Generator's Annual Certification, RCSA Section 22a-174-29 "Hazardous Air Pollutants" (Attachment C), when applicable.

i. Notification in writing of any special handling requirements needed to ensure the safety and health of workers at the disposal facility.

2. Material Characterization Form (MCF)

The Permittee shall require that the generator submit for the Permittee's evaluation, characterization and approval, a completed MCF (Attachment D) for each special waste stream. The MCF will provide an outline of the information listed above in Section I.F.1. of this Plan. The MCF requires the generator to certify that the special waste is not hazardous waste. Waste brokers that may combine special wastes from multiple generators shall submit an MCF for the combined special waste stream, along with certification statements from the generators for each special waste stream that was combined. If a special waste stream is determined to be a hazardous waste, the waste stream shall not be authorized by the Permittee for receipt at the Facility and a written notification shall be sent to the generator/broker stating that the waste stream is unacceptable and explain the reason for such.

Once the special waste stream is approved for disposal by the Permittee on the basis of the information required by Section I.F.1. of this Plan and the MCF, any future special waste deliveries (of the same special waste stream and from the same generator) in concordance with the provided information, can be accepted without any additional submittals from the same generator, except as may be required by Sections I.F.3, 4, and 5 of this Plan.

3. Hazardous Waste Determinations

The Permittee shall comply with the following:

a. The Permittee shall require the generator to provide, for the Permittee's evaluation, a hazardous waste determination along with supporting documentation (analytical data; information regarding the generating process; etc.), in accordance with RCSA Sections 22a-449(c)-102(a)(2)(A), 22a-449(c)-100 through 119 and 22a-449(c)-11. Such determinations

shall be requested by the Permittee annually, or whenever there is a change in materials used and/or the process conducted that would alter the characteristics of the waste stream.

b. The generator's hazardous waste determination and the supporting documentation shall be further evaluated by the Permittee to determine if the proposed special waste is, or is not, a hazardous waste. Such determination may be made, as necessary, based on documentation of one, or a combination, of the following:

(i) Laboratory Analysis if required (see Section I.F.4 below)
The Permittee shall ensure that the generator performs such laboratory analyses on a representative sample of each waste stream using the appropriate test methods specified in Attachment A of this Plan. The results of such analyses shall be used by the Permittee for the initial characterization of the special waste (see Section I.F.5. of this Plan, including Attachment A). Laboratory analyses shall also be required, if there is a change in the material used and/or the processes conducted that would alter the characteristics of the waste stream generated.

(ii) Knowledge of the Generator's Process (Process Knowledge)
The Permittee shall ensure that the generator characterizes the generated waste based on his own detailed knowledge of the process generating the waste. Such characterization shall include the hazardous characteristics, chemical composition, and the physical properties of such generated waste and shall not be based solely on the materials used. The Permittee shall require the generator to submit a written evaluation along with the SDS document, formulations sheets, process flow diagrams, and other information necessary to establish that the special waste is not a hazardous waste.

As applicable, the generator may document knowledge of the special waste generating process and submit a Generator's Annual Certification Form (Attachment E), certifying that the previously submitted special waste characterization is still true, accurate and complete. Such certification shall be submitted on or before the anniversary date of the issuance of this Plan each year.

4. Analytical Requirements

Records of laboratory analyses of the special waste and/or documented knowledge of the process, submitted by the generator to demonstrate that the special waste is not a hazardous waste, and justifications for destruction of recyclable items, shall be maintained at the Facility for five (5) years as required by Section I.J.1 of this Plan. Failure by the generator to provide adequate documentation shall result in a written rejection of the request for disposal of special waste by the Permittee. **Any laboratory analysis for the characterization of the special waste shall include, at a minimum, the testing parameters specified in Attachment A.** In addition to a completed MCF and a certification that the special waste is not a hazardous waste, each generator shall be required to provide the following information for each special waste category for the Permittee's evaluation and initial characterization:

a. Commodity Waste (Consumer Products)

For all commodity wastes (except food items and health/beauty aids), a qualified laboratory analysis verifying that such special waste is not a hazardous waste shall be required by the Permittee to accompany the generator's initial submittal of documents and/or a detailed generator knowledge description in accordance with Section I.F.3.b(ii) of this Plan.

For food items and aids for health and beauty, the chemical composition and physical properties of the special waste within this category may be provided through the "Process Knowledge" in the form of an MCF, SDS, formulation sheet or process flow diagram, provided that such information is sufficient to demonstrate the chemical composition of the special waste and to ensure that the special waste is not a hazardous waste.

See categories below for commodity special wastes, which predominantly contain either paint, plastics, rubber or oil.

b. Paint/Plastics/Rubber Waste

For oil based paints, a qualified laboratory analysis verifying that such special waste is not a hazardous waste shall be required by the Permittee to accompany the generator's initial submittal of documents.

The chemical composition and physical properties of special waste within a category other than oil based paints may be provided through "Process Knowledge" in the form of an MCF, SDS, formulation sheet, or process flow diagram, provided that such information is sufficient to demonstrate the chemical composition of the special waste and to ensure that the special waste is not a hazardous waste.

c. Oil Contaminated Waste and/or Debris

For special wastes in this category, a qualified laboratory analysis verifying that such special waste is not hazardous waste shall be required by the Permittee to accompany the generator's initial submittal of documents and/or a detailed generator knowledge description in accordance with Section I.F.3.b(ii) of this Plan.

Only incidental quantities of contaminated soil that come in contact with absorbents such as sawdust, or any other available commercial product during the clean-up process, may be accepted at the Facility. Soil that is contaminated by spills is not considered an absorbent and is not suitable for acceptance at the Facility.

Oily waste and/or oil-contaminated debris containing any free draining liquid, except de minimis quantities, shall be rejected.

d. Industrial Waste

For all industrial wastes included in this category, a certified laboratory analysis verifying that such special waste is not hazardous waste and/or detailed generator knowledge description in accordance with Section I.F.3.b(ii) of this Plan shall be required by the Permittee to accompany the generator's initial submittal of documents. Industrial waste containing any free draining liquids, except de minimis quantities, will be rejected.

e. Pharmaceutical Wastes (Pre-consumer)

For those items with unknown chemical compositions, a certified laboratory analysis verifying that such special waste is not a hazardous waste shall be required by the Permittee to accompany the generator's initial submittal of documents.

For pharmaceutical wastes, the chemical compositions and physical properties may be provided through "Process Knowledge", in the form of an MCF, SDS, formulation sheets, or process flow diagrams, provided that such information is sufficient to demonstrate the chemical composition of the special waste and to ensure that the special waste is not a hazardous waste.

f. Pharmaceutical Wastes (Post-consumer)
Any pharmaceuticals and controlled substances generated by residential sources and collected by local or state law enforcement departments or by Department authorized take-back events shall be exempt from RCRA hazardous waste determination requirements. Post-consumer Pharmaceuticals from non-residential sources shall not be accepted under this special waste category.

g. Printing Waste
For printing waste (oil contaminated or not) whose chemical composition cannot be determined, a certified laboratory analysis verifying that such special waste is not hazardous waste shall be required by the Permittee to accompany the generator's initial submittal of documents.

The chemical composition and physical properties of the printing waste that are not oil based may be provided through "Process Knowledge", in the form of an MCF, SDS, formulation sheet, or process flow diagram, provided that such information is sufficient to demonstrate that the special waste is not a hazardous waste. Otherwise, laboratory analysis may be required.

h. Processed Screenings from Sewage Treatment Facilities
Processed screenings that have undergone dewatering are acceptable for disposal at the Facility. The chemical composition and physical properties of the special waste may be provided through "Process Knowledge", in the form of an MCF, SDS, formulation sheet, or process flow diagram, provided that such information is sufficient to demonstrate that the special waste is not a hazardous waste. Otherwise, analytical tests may be required.

i. Wood Debris derived from Processed Construction and Demolition Waste
For wood debris derived from processed construction and demolition waste, including but not limited to, wood block flooring; walls from manufacturing areas; processing facilities or waste composite scrap, a certified laboratory analysis that verifies that the special waste is not a hazardous waste shall be required by the Permittee to accompany each generator's initial submittal of documents.

j. Contraband Waste

(i) For all contraband waste combusted with a law enforcement witness, and where such waste is not a hazardous waste pursuant to Section I.F. of this Plan, the Permittee shall comply with all federal, state and local laws pertaining to the handling and processing of such waste.

(ii) For all contraband waste intended for destruction, without a law enforcement witness, that is a recyclable item pursuant to CGS Section 22a-241b, and is not a hazardous waste as described in Section I.F of this Plan, the Permittee shall comply with all federal, state and local laws pertaining to recycling, unless the generator has complied with Section I.F.4.l. of this Plan.

(iii) For all contraband waste that does not meet the specifications of Section I.F.4.j.(i) and (ii) above, a Hazardous Waste Determination shall be conducted as required in Section I.F.3. of this Plan. The determination shall be conducted on a homogenous representative sample of each special waste from each generator. The analysis shall include, at a minimum, the testing parameters specified in Attachment A. The Generator's failure to

provide laboratory analysis will result in a written rejection of the special waste by the Permittee.

k. Agricultural Wastes/Quarantine Wastes
A Hazardous Waste Determination shall be conducted as required in Section I.F.3. of this Plan. Such determination shall verify that the waste is not hazardous waste and such verification shall be required by the Permittee to accompany each generator's initial characterization of the waste.

l. Materials for Secure Destruction
For secure destruction materials, the generator shall be required to provide written justification for not recycling the materials but instead requiring their secure destruction.

For secure destruction waste, chemical composition and physical properties of printed waste that are not oil based may be provided through process knowledge, in the form of the MCF, SDF, formulation sheets or process flow diagrams provided that such information is sufficient to demonstrate that the special waste is not a hazardous waste. This category includes recyclable items such as confidential paper documents or mislabeled containers (cardboard or plastic).

m. Autoclaved Wastes
For each load of Autoclaved wastes received at the Facility for combustion the Permittee shall require the generator to submit a generator's certification that the waste has been rendered inert in accordance with RCSA Section 22a-209-15(f)(6). Such certification shall be accompanied by laboratory analysis verifying biological destruction, that the waste is not hazardous and non-pathogenic. The certification must also outline the treatment method used to render the material inert.

5. Minimum Submittal Requirements
The Permittee shall ensure the following:

a. Special Waste Characterization
(i) Initial Characterization. Require the generator to submit for the Permittee's initial evaluation, the necessary documentation (i.e., GW information; MCF; CT Hazardous Air Pollutants (HAPs) and other documentation used to conduct a hazardous waste determination), for each homogenous special waste specified in Section I.E of this Plan.

(ii) Annual Characterization. Require generators to submit annually, on or before the anniversary date of the issuance of this Plan, for the Permittee's evaluation the necessary documentation (i.e., GW information; MCF; and other documentation used to conduct a hazardous waste determination), for each homogenous special waste specified in Section I.E. of this Plan.

In lieu of the laboratory analysis required by Section I.F of this Plan, the Permittee may require the generator to submit to the Permittee a signed Generator's Annual Certification Form (Attachment E) to certify that the previous evaluation submitted for the same type of special waste is still true, accurate, and complete, and that there are no changes in the materials used or the generating process, that may alter the characteristics of the special waste previously approved by the Permittee. Any generator that fails to submit a Generator's Annual Certification Form for any special waste previously approved by the

Permittee shall be required to seek approval in accordance with Section I.F.5.a.(i). of this Plan.

b. Changes in Special Waste and/or Processes
The Permittee shall require the generator to submit a Hazardous Waste Determination with appropriate documentation pursuant to Section I.F. of this Plan, whenever there is a change in the materials used or the generating process that would alter the characteristics of the special waste previously approved by the Permittee.

c. Agricultural/Quarantined Wastes
The Permittee shall require the generator to submit documentation assuring that notification has been made to the Connecticut Department of Agriculture of the wastes to be destroyed, the type of wastes, volume of the wastes and the reason for the destruction of the wastes.

G. REVIEW, APPROVAL AND SCHEDULING OF SHIPMENTS

1. Review and Approval

The Permittee shall review and approve the request to receive and process special waste(s) at the Facility as follows:

a. Environmental Review
The documentation submitted by the generator (i.e., an application; the GW information; an MCF; laboratory analysis; the description of the process generating the special wastes; an SDS; etc.) will be thoroughly reviewed by the Permittee to ensure that the special waste is not a hazardous waste prohibited to be received or processed at the Facility. Such review shall be based on the documentation submitted, all appropriate operational permit allowances and compliance with all local, state or federal laws or regulations. The specific chemical characteristics of the special waste shall then be assessed with respect to the Maximum Allowable Stack Concentration ("MASC") specifications (see attachment C) included in applicable air permits issued by the Department to confirm that the combustion and air pollution control systems can effectively manage those chemical constituents.

b. Environmental, Health and Safety Review ("EHSR")
Based upon favorable results of a thorough review, pursuant to Section I.G.1.a. of this Plan, specific handling and processing requirements shall be established for the special waste. The EHSR will focus on worker exposure and the potential impacts to the health and safety of any staff involved in the handling of the special waste prior to processing.

When applicable, the Permittee shall: (i) notify the generator in writing that safe on-site handling of the special waste cannot be assured; (ii) notify the generator in writing that the special waste is suspected or has been determined to be waste prohibited to be received or processed at the Facility by local, state and/or federal permits or regulations; (iii) notify the generator in writing that the such waste is being rejected; and (iv) maintain records at the Facility regarding the reason(s) for such rejection as required in Section I.J.1. of this Plan.

c. Approval of Special Waste
Once the application package has been reviewed, a final written approval("Approval"), or denial shall be issued by the Permittee to the generator. If an Approval is issued, the proposed special waste may be received at the Facility for processing in accordance with all applicable requirements, including any special handling and/or logistical arrangements established by the Permittee. The Permittee shall maintain at the Facility a "generator" file

that includes all documents submitted as required in Section J. of this Plan and shall also include a copy of the Approval issued to the generator. The Permittee shall supplement the Plan, as needed, to incorporate any new special waste handling and/or processing procedures for special wastes within a Special Waste Category as authorized under Section. I.E. of this Plan.

2. Scheduling of Shipments

All shipments shall be scheduled so as to avoid any safety hazards, nuisances, increased truck traffic, or exceedances of the approved TPD receiving and processing limits specified in Section I.B.6. of this Plan.

The Permittee:

a. May reject unscheduled special waste shipments;
b. Shall confirm that the proposed delivery date is acceptable or reschedule the shipment; and
c. Shall ensure that only approved special waste is received at the Facility for processing.

H. WASTE SCREENING QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES (QA/QC)

1. Visual Verification of Received Loads

The Permittee shall:

a. Verify that the special waste being delivered is as described in the previously issued written Approval;
b. Ensure that each load received at the Facility is visually inspected prior to blending with MSW for processing ;
c. When applicable, visually inspect each load to verify the contents of the load and that the tracking codes on the labels and/or container markings agree with the inventory quantity and waste description specified on the shipping documents;
d. Record all required information pertaining to the special waste in the Facility operating records and maintain such records as required in Section I.J. of this Plan;
e. Not accept any special waste that is not listed on the previously issued written Approval and/or special waste that is not consistent with the approved waste description;
f. Notify the Waste Engineering and Enforcement Division of the Department's Bureau of Materials Management and Compliance Assurance if any waste or loads are rejected. Such notification shall include a copy of the completed inspection form detailing the reason for the rejection;
g. Ensure that no hazardous waste [as defined in CGS Section 22a-115, RCSA Section 22a-449(c)-100 , or subpart 261, Title 40 of CFR] is received or processed at the Facility. Any hazardous waste inadvertently received at the Facility:
    (i) Shall not be disposed or otherwise processed at the Facility;
    (ii) Shall immediately upon discovery be segregated from other solid waste and shall be stored and managed at the Facility in a dedicated area until transferred from the Facility; and
    (iii) Shall be transferred in accordance with applicable laws and regulations to a permitted treatment/disposal facility; and
h. Ensure that:
    (i) No special waste authorized by this Plan, for receipt and processing, that is contained in metal drums is received at the Facility;
    (ii) Any special waste deliveries arriving in metal drums are rejected;
    (iii) Any special waste deliveries containing more than de minimus quantities of free draining liquids are rejected; and

(iv) An inspection form listing the special waste received or rejected and the reason for the rejection is completed and maintained on file at the Facility as required by Section I.J. of this Plan.

2. QA/QC Procedures For Deliveries

The Permittee, for each load of delivered special waste by vehicle, shall record the license plate number and/or truck number of each truck and/or trailer delivering such special waste and such records shall be maintained at the Facility as required by Section I.J.1.b.(i) of this Plan.

I. OPERATING PROCEDURES

The Permittee shall:

1. Ensure that all operations at the Facility are in continuous compliance with all applicable requirements set forth in all authorizations issued by the Department of Energy and Environmental Protection, this Plan and all other local, State and Federal laws

2. Ensure that no special waste is processed during Continuous Emissions Monitoring (CEM), downtime, with the exception of CEM daily calibrations;

3. Operate the Facility in a safe manner so as to control fire, odor, noise, spills, vectors, litter, diesel and dust emission levels in continuous compliance with all applicable requirements, including those of the Occupational Safety and Health Administration;

4. Ensure that a consistent feed ratio is maintained so as to ensure homogeneity and not exceed the maximum daily processing through combustion of special waste authorized in Section I.B.6.b. of this Plan;

5. Ensure that Pharmaceutical Waste(s) that require a witness or that are U.S. Drug Enforcement Agency controlled substances are fed directly into the combustion unit or hopper.

J. OPERATING RECORDS AND REPORTS

1. Operating Records

The Permittee shall maintain, as part of the operating records for the Facility, all documents pertaining to the Approval for receipt and processing of special wastes authorized by and as specified in Section I.G.1.c. of this Plan. The Permittee shall maintain daily records as required by RCSA Sections 22a-209-9(p) and 22a-209-10(13) and CGS Sections 22a-208e and 22a-220. All operating records shall be maintained at the Facility for the life of this Plan and shall be made available to the Commissioner for review upon request. Such records shall include, but may not be limited to, the following information:

a. Approvals

(i) All GW characterizations; MCF; SDS(s); any other info/data submitted by the generator;
(ii) Analytical data; initial analysis; QA/QC; any other follow-up information and/or data;
(iii) The Approval pursuant to Section I.G.1.c., and the associated paperwork;
(iv) Any other reviews related to the issued Approval; and
(v) Any related amendments to the Approval.

b. Deliveries
   (i) Supporting documentation accompanying the special waste delivery vehicle;
   (ii) The receipt date, time and weight of the special waste;
   (iii) The origin, transporter (license plate and/or truck number); and
   (iv) A description of the special waste (visual verification and inspection notes).

c. Rejections
   (i) Information pertaining to all special wastes rejected and reason for rejection; and
   (ii) A copy of the notice of rejection required pursuant to Section I.H.1.f. of this Plan.

2. Operating Reports

The Permittee shall ensure timely submittal to the Commissioner of the Special Waste Disposal Quarterly Report (Attachment F). Such reports shall be submitted no later than January 31, April 30, July 31 and October 31 of each year, directly to:

Solid Waste Program
Waste Engineering and Enforcement Division
Bureau of Materials Management and Compliance Assurance
Department of Energy and Environmental Protection
79 Elm Street, Hartford, CT 06106-5127
Or via email using
DEEP.Solid&HazWasteReports@ct.gov

K. TRAINING

The Permittee shall ensure that all operators involved with special waste handling are trained, prior to assuming such handling responsibilities. Such staff shall be trained in the procedures contained in this Plan at a minimum of once in every twelve month period thereafter. Records of such training shall be maintained as a part of the Facility operating records.

SECTION II

ATTACHMENTS

ATTACHMENT A
MINIMUM TESTING PARAMETERS FOR INITIAL CHARACTERIZATION/ACCEPTANCE OF SPECIAL WASTE AT A RESOURCES RECOVERY FACILITY

	Special Waste Categories[1]	Minimum Analyses and Parameters [2,3]
1.	Commodity Wastes (Consumer Products)	TCLP metals (except for food items and health/beauty aids)
2.	Paint/Plastic/Rubber Wastes	TCLP metals TCLP volatile organics
3.	Oil Contaminated Wastes and Debris	TCLP (all parameters) Ignitability, Corrosivity, Reactivity, Liquid paint filter test (as necessary) PCBs
4.	Industrial Wastes	TCLP (all parameters) Ignitability, Corrosivity, Reactivity, Liquid paint filter test (as necessary) PCBs
5.	Pharmaceutical Wastes	TCLP metals TCLP volatile organics
6.	Pharmaceutical Wastes (Post-consumer)	**No testing required,** Process knowledge
7.	Printing Wastes	TCLP metals TCLP volatile organics
8.	Processed Screenings From Sewage Treatment Facilities	No testing required. Process knowledge.
9.	Wood Debris derived from Processed Construction and Demolition Waste	TCLP (all parameters) Ignitability, Corrosivity, Reactivity, Liquid paint filter test (as necessary) PCBs
10.	Contraband Wastes	TCLP (all parameters) Ignitability, Corrosivity, Reactivity, Liquid paint filter test (as necessary) PCBs Except for contraband listed in Section I.F.4.j.(i) and (ii)
11.	Agricultural Wastes/Quarantined Wastes	Process knowledge or TCLP as necessary (all parameters)
12.	Materials for Secure Destruction	Process knowledge or TCLP as necessary (all parameters)
13.	Autoclaved Wastes	Process knowledge or TCLP as necessary (all parameters)

[1] This attachment identifies the minimum analytical requirements for characterizing the waste. If the chemical composition of waste is unknown or process knowledge has determined that other substances are known or potentially present in the waste, then additional parameters should be tested based on such knowledge.
[2] See Attachment B for list of parameters for TCLP, 40 CFR 261.24.
[3] Using Test Methods For Evaluation of Solid Waste, Physical/Chemical Methods, EPA publication SW-846, Office of Solid Waste, Washington, D.C. 20460, (http://www.epa.gov/wastes/hazard/testmethods/sw846/online/index.htm), as amended.

ATTACHMENT B

MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC (TC) (40 CFR 261.24)

CATEGORY	EPA HW No.	CONTAMINANT	REGULATORY LEVEL (mg/L)
Metals	D004	Arsenic	5.0
	D005	Barium	100.0
	D006	Cadmium	1.0
	D007	Chromium	5.0
	D008	Lead	5.0
	D009	Mercury	0.2
	D010	Selenium	1.0
	D011	Silver	5.0
Volatiles	D018	Benzene	0.5
	D019	Carbon tetrachloride	0.5
	D021	Chlorobenzene	100.0
	D022	Chloroform	6.0
	D027	1,4-Dichlorobenzene	7.5
	D028	1,2-Dichloroethane	0.5
	D029	1,1-Dichloroethylene	0.7
	D032	Hexachlorobenzene	0.13
	D033	Hexachlorobutadiene	0.5
	D034	Hexachloroethane	3.0
	D035	Methyl ethyl ketone	200.0
	D039	Tetrachloroethylene	0.7
	D040	Trichloroethylene	0.5
	D043	Vinyl chloride	0.2
Semi-Volatiles	D023*	o-Cresol	200.0
	D024*	m-Cresol	200.0
	D025*	p-Cresol	200.0
	D026*	Cresol	200.0
	D030	2,4-Dinitrotoluene	0.13
	D036	Nitrobenzene	2.0
	D037	Pentachlorophenol	100.0
	D038	Pyridine	5.0
	D041	2,4,5-Trichlorophenol	400.0
	D042	2,4,6-Trichlorophenol	2.0
Pesticides/ Herbicides	D020	Chlordane	0.03
	D016	2,4-D	10.0
	D012	Endrin	0.02
	D031	Heptachlor (and its epoxide)	0.008
	D013	Lindane	0.4
	D014	Methoxychlor	10.0
	D015	Toxaphene	0.5
	D017	2,4,5-TP (Silvex)	1.0

*If o-, m-, and p-Cresol concentrations cannot be differentiated, the total Cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

ATTACHMENT C

HAZARDOUS AIR POLLUTANTS

SECTION 22a-174-29 OF THE

REGULATIONS OF CONNECTICUT STATE AGENCIES

See the following link:
http://www.ct.gov/deep/lib/deep/air/regulations/mainregs/sec29.pdf

ATTACHMENT D

MATERIAL CHARACTERIZATION FORM (MCF)

COVANTA
Environmental Solutions

Material Characterization Form (MCF)

Section 1 - General Customer Information: REQUIRED SECTION *(If multiple generating or shipping locations, include a list as an attachment)*

Generator Company Information

Company Name _____
Address _____
City _____ State _____ Zip Code _____
Phone # _____ Fax # _____

Service Company Information

Company Name _____
Address _____
City _____ State _____ Zip Code _____
Phone # _____ Fax # _____

Primary Contact Information - *Enter the contact information for the person who can answer questions about the waste and process.*

Contact Name _____
Title _____
Company Name _____
Phone # _____ E-mail _____

Billing Information - *Identify where Covanta should forward invoices:*
☐ *Generator's Address;* ☐ *Service Company's Address; or* ☐ *other*

Address _____
City _____ State _____ Zip Code _____
Contact Name _____
Phone # _____ E-mail _____
Will a PO Number be required? ☐ *No* ☐ *Yes*

☒ ***Service Company Authorization***

On Behalf of the Generator of the waste profiled herein, I hereby authorize the aforementioned Service Company; and/or ☒ Covanta Environmental Solutions to complete Covanta's Material Characterization Form (MCF) and all other necessary forms for the disposal of the non-hazardous waste described on them. Furthermore, I understand that the completion of this authorization provides consent to characterize and profile this waste.

Generator's Representative

Name _____
Title _____ _____ _____
Signature *Date*

Section 2 - Waste Stream Information

2.1 - Name of Waste - An answer on this item is **REQUIRED** _____

2.2 - Physical Form - An answer on this items is **REQUIRED**
☐ Consumer Packaged ☐ Bulk ☐ Solid (Non-Dusting) ☐ Powder ☐ Waxy Solid ☐ Liquid ☐ Semisolid ☐ Other: _____

2.3 - Other Physical Characteristics
Odor: _____ Flash Point (°F): _____ pH: _____
Heating Value (in BTUs/lb): _____ ☐ Estimated; or ☐ Measured

2.4 - Container Type - An answer on this items is **REQUIRED**
☐ Steel Drums ☐ Plastic (Poly) Drums ☐ Fiber Drums ☐ Supersacs ☐ Cubic Yard Boxes ☐ Totes ☐ Pails ☐ Other: _____

2.5 - Quantity per Delivery _____

2.6 - Frequency _____

2.7 - Delivery Vehicle _____

2.8 - Waste Process Description
Provide a detailed description of the waste generating process. Describe the materials used to generate the waste, as well as, any other chemical or physical constituents that may be present as a result of commingling or contamination. Provide a process flow diagram if possible. Attach additional pages if necessary.

Name of Waste: _____

Section 3 - Regulatory Waste Classification

3.1 Is the profiled waste an EPA **RCRA Listed Hazardous Waste** per 40 CFR 261? ☐ NO ☐ YES - **STOP, Waste is unacceptable**

3.2 Is the profiled waste an EPA **RCRA Characteristic Hazardous Waste** per 40 CFR 261? ☐ NO ☐ YES - **STOP, Waste is unacceptable**

3.3 Is the profiled waste a "Hazardous Waste" as defined by the State of Origin? ☐ NO ☐ YES - specify State ID: _____

3.4 Does the waste meet the definition of any of the following in the State of Origin? *(Check all that apply)*:

☐ None ☐ Special Waste ☐ Residual Waste ☐ Regulated Waste - State Waste Code: _____ ☐ Other: _____

3.5 Does the waste meet the exemption criteria from any of the following? *(Check all that apply. A separate addendum may be required)*

☐ Aqueous Solution (<24% Alcohol and >50% Water) ☐ Non-Terne Plated Used Oil Filters ☐ RCRA Empty ☐ Other: _____

3.6 Please describe how the previous questions were answered *(Check all that apply)*

☐ Analytical Data ☐ Generator Knowledge ☐ Other: _____

3.7 Please select any of the following terms that are associated with the profiled waste *(Check all that apply)*

☐ Household Hazardous Waste (HHW) ☐ FIFRA ☐ DOT Reg. ☐ OSHA ☐ CERCLA Site ☐ Radioactive ☐ Treated Medical Waste

Section 4 - Waste Composition

4.1 - Constituents - An answer on this item is **REQUIRED.**
Identify the *TOTAL* concentration of the following constituents, if present in the profiled waste. Report ***TOTAL*** concentration results as weight percent (wt.%) or ppm. ***Do not report TCLP results in this section.*** If a constituent is not applicable, please identify it by noting "N/A"; if not present, please mark it as zero (0). If the profiled waste stream is made up of several components, products or materials, please estimate these constituents' concentrations using generator knowledge or supporting information.

☐ N/A for all constituents below ☐ Zero (0) for all constituents below

Bromine	ppm	Antimony	ppm
Chlorine	wt.%	Beryllium	ppm
Fluorine	ppm	Cobalt	ppm
Iodine	ppm	Copper	ppm
Nitrogen	wt.%	Manganese	ppm
Sulfur	wt.%	Nickel	ppm
Arsenic	ppm	Vanadium	ppm
Barium	ppm	Zinc	ppm
Cadmium	ppm	Aluminum Oxide	ppm
Chromium	ppm	Silicates	ppm
Lead	ppm	Silicone	wt.%
Mercury	ppm	Titanium Dioxide	wt.%
Selenium	ppm	Water	wt.%
Silver	ppm	Alcohol	wt.%

4.2 - Composition - An answer on this item is **REQUIRED.**
Identify the components that make up the profiled waste. If packaging is considered as a component of the waste, please estimate the waste's packaging range. Attach additional pages if needed.

Component	Range (wt.%)
TOTAL COMPOSITION	≥100

Section 5 - Non-Hazardous Waste Certification

I certify, as an Authorized Representative of the Generator, that this document, including all completed forms and all pertinent addenda, accurately represent and describe the waste stream outlined. The information submitted is true, accurate and complete, and no available information has been omitted or falsified. I further certify that the profiled waste is non-hazardous based upon Federal, State and Local Regulations.

Generator's Authorized Representative

Name _____

Title _____

Company _____ _____ _____

Signature Date

ATTACHMENT E

GENERATOR'S ANNUAL CERTIFICATION FORM

(submitted to the RRF for review and approval)

TYPE OF SPECIAL WASTE _____

CERTIFICATION: I hereby certify, under penalty of law, that the chemical composition and the process(es) generating the special waste have not changed that would alter the characteristics of the waste since the previous hazardous waste determination. I certify that the analytical results, process knowledge or combination thereof, documented within the past twelve (12) months, are true, accurate, and complete for this special waste. Furthermore, the special waste that is subject to this annual certification is not hazardous as defined in the Regulations of the Connecticut State Agencies (RCSA) Section 22a-449 and 40 CFR 261.

I have personally examined and am familiar with the information contained in this document and all attachments thereto, and I certify that based on a reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate, and complete to the best of my knowledge and belief. I understand that a false statement in the submitted information may be punishable as a criminal offense in accordance with Section 22a-6 of the Connecticut General Statutes (CGS) pursuant to Section 55a-157b of the CGS and in accordance with any other applicable statute or regulation.

_____
Printed Name of Generator

_____ _____
Authorized Signature of Generator Date

ATTACHMENT F

SPECIAL WASTE DISPOSAL QUARTERLY REPORT

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

ATTACHMENT F
Special Waste Disposal Quarterly Report

Facility Name _____ **Quarter** _____

Date Received	Special Waste Category	Waste Description	Weight In Tons	Type of Container	Generator	Waste Determination Method Used		
						Hazardous Waste Determination	Process Knowledge	Other

Total Special Waste Received _____
Indicate totals of special waste received for each month within the quarter.

Please reproduce this sheet for filing monthly reports.

<Rev. 12/17/14>

Appendix B

Temperature Correlation Test Report Summary

OGDEN PROJECTS, INC.

WATERGATE TOWER
SUITE 400
1900 POWELL STREET
EMERYVILLE, CALIFORNIA 94608
(415) 420-1766

AN OGDEN COMPANY

November 11, 1988

Mr. Joseph Ulevicus
State of Connecticut
Department of Environmental Protection
165 Capitol Avenue
Hartford, CT 06106

Dear Mr. Ulevicus:

Enclosed is the Temperature Correlation Test Report (OPI Report No. 185) for the Bristol Resource Recovery Facility. This report is submitted as documentation of Ogden Martin Systems of Bristol, Inc. compliance with the State of Connecticut Department of Environmental Protection Permit to Operate Nos. 0026 and 0027.

Should you have any questions about this report, or need further information, please let me know.

Sincerely,

Marilyn Goodman, for Jeffrey L. Hahn

Jeffrey L. Hahn, P.E.
Executive Vice President

JLH:dss

Distribution

J. Wofford (OPI-Fairfield)
D. Lehman (OPI-Fairfield)
J. Klett (OPI-Fairfield)
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G. Crane (OPI-Fairfield)
A. Hildabidle (OPI-Fairfield)

OGDEN PROJECTS, INC.

WATERGATE TOWER
SUITE 400
1900 POWELL STREET
EMERYVILLE, CALIFORNIA 94608
(415) 420-1766

AN OGDEN COMPANY

Environmental Engineering Department

TEMPERATURE CORRELATION TEST REPORT

PREPARED FOR: Ogden Martin Systems of Bristol, Inc.
170 Enterprise Drive
Bristol, CT 06010

REGARDING: Bristol Resource Recovery Facility
Units 1 and 2

PURPOSE: Demonstration of Compliance with State of Connecticut Department of Environmental Protection Permit to Operate Nos. 0026 and 0027

TEST DATES: October 27 and 28, 1988

ASSOCIATED REPORTS: OPI Report No. 176R

REPORT NUMBER: 185

PREPARED BY:

Ronald A. Zurlinden, Environmental Scientist

Jeffrey L. Hahn, P.E., Executive Vice President
Environmental Engineering

REGISTERED PROFESSIONAL ENGINEER
JEFFREY L. HAHN
No 3289
CHEMICAL
STATE OF CALIFORNIA

November 11, 1988

Table of Contents

A. INTRODUCTION

On October 27 and 28, 1988, Ogden Projects, Inc. (OPI) performed a series of temperature measurements on Units 1 and 2 of the Bristol Resource Recovery Facility to satisfy the requirements of Sections E(4), F(1.a), F(3.c), and F(3.g) of the State of Connecticut Department of Environmental Protection Permit to Operate Nos. 0026 and 0027. Located in Bristol, CT, this waste-to-energy facility is owned and operated by Ogden Martin Systems of Bristol, Inc. (OMSBI).

The operating permits require that temperatures measured by each permanently installed, unshielded, furnace-roof thermocouple be correlated with combustion gas temperatures measured at one-second of residence time above the overfire (secondary) air injection ports. This correlation is expressed as a Delta T value and is used to correct the temperature measured by the roof thermocouple to establish a Trip Point for manual activation of the auxiliary burner system.

Each unit was tested while firing municipal solid waste at or near design capacity. Process parameters specified in OPI Report No. 176R were monitored during the test and are presented in Section E.

B. Testing Program

A center view port of each unit, located in the refractory zone near the auxiliary burner, was used to obtain temperature measurements with a Land Combustion, Inc. Model SU3 water-cooled suction pyrometer. On each unit, the center view port is located 58'7" above ground level (AGL) and 16'1" above the overfire air injection ports, which are located 42'6" AGL.

Prior to testing, the SU-3 temperature measuring system was calibrated within the expected temperature range. The average correction over this temperature range was used to adjust the temperatures recorded during the test (see Appendix A).

One temperature traverse was done on each furnace during steady state operation. Temperature readings were taken at one-foot intervals with the probe perpendicular to the view port wall. At each point, before readings were taken, the probe was allowed to equilibrate until the temperature stabilized. The average values for each one-foot interval on the traverse were added and the average value is reported.

The SU3 temperature data were recorded on a strip chart recorder fitted with a temperature-to-analog converter. This allowed direct readings of temperatures from the strip charts without using thermocouple tables for conversions. The strip chart recorder was calibrated before and after each test series, using an Omega Engineering, Inc. Model OMNICAL IIA-4A NBS traceable Thermocouple Calibrator. Simultaneous strip chart recordings of the furnace roof thermocouple temperatures were collected. Roof thermocouple wiring, process instrumentation, and strip chart recorder were checked and calibrated prior to testing (see Appendix A).

Messrs. Christian Colline and Eric Selya, both of OPI, conducted the test program and were assisted by Messrs. Kyle Baillargeon and John Rendulic, both of OMSBI. As described in the test plan, Messrs. Joseph Ulevicus and David Sattler, both of State of Connecticut Department of Environmental Protection observed the test program. Messrs. Henry P. Von Dem Fange and Jeffrey Hahn, P.E., both of OPI, supervised the test and provided quality assurance and control.

C. SCHEDULE OF ACTIVITIES

Date	Time	Unit	Activity
10/27/88	1253-1603	1	Temperature Traverse
	1250-1450	1	U.S. EPA Methods 1, 2, 3, and 4
10/28/88	1100-1340	2	Temperature Traverse
	1133-1325	2	U.S. EPA Methods 1, 2, 3, and 4

D. SUMMARY OF RESULTS

D. 1. Development of Delta T Factor

	Average Temperature of Suction Pyrometer (°F)	Actual Roof Thermocouple Temperature (°F)	Delta T (°F)
Unit 1	1857	1546	311
Unit 2	1875	1560	315

D. 2. Development of Trip Point and Mininum Permitted Furnace Temperatures

	Actual Temperature @1 sec. above Overfire Air Injection (°F)	Actual Roof Thermocouple Reading (°F)	Delta T	Trip Point Temperature Uncorrected at Roof Thermocouple (°F)	Minimum Permitted Temperature Uncorrected at Roof Thermocouple (°F)
	(A)	(B)	(C=A-B)	(D=1550°F-C)	(E=1500°F-C)
Unit 1	1857	1546	311	1239	1189
Unit 2	1875	1560	315	1235	1185

E. PROCESS PARAMETERS DURING TEMPERATURE TESTING

Process Parameter (units)	Unit 1	Unit 2
Steam flow rate (1000 lbs/hr)	75	75
Combustion air flow rate(%30 Kcfm)	73	88
Overfire air pressure (%10 Kcfm)	103	104
Exit gas (%O_2, Wet)	9.9	9.8
Feed water flow rate (1000 lbs/hr)	78	75
Superheater outlet temperature (°F)	833	726
Superheater outlet pressure (%1200 psig)	70.8	70.6
Economizer outlet temperature (°F)	426	499
Primary top zone temperature (°F)	1598	1609
Convection Zone Temperature (°F)	1514	1534
Roof Thermocouple (°F)	1546	1560

F. METHODOLOGY

F. 1. References

U.S. EPA, 40CFR60, Methods 1, 2, 3, and 4, 1986.

F. 2. Equipment

LAND Combustion, Inc., Model SU3 Suction Pyrometer, Serial No. 880211.

Omega Engineering, Inc., Model OMNICAL IIA-4A Calibrator, Serial No. 1248427116.

F. 3. Calculations

Unit 1

Measured at stack (U.S. EPA Methods 1, 2, 3, and 4):

72,500 acfm at 771°R and 14.6% H_2O = 42,400 dscfm at 68°F

Assume 3% air infiltration through air pollution control device system:

42,400 * 0.97 = 41,100 dscfm (at economizer outlet)

Assume 12.1% H_2O at economizer outlet (based on energy testing conducted January 28, 1988):

Volumetric flow rate in furnace:

$$41{,}100 * \left[\frac{460 + 1857°F}{460 + 68°F}\right] * \left[\frac{1}{1-0.121}\right] = 205{,}200 \text{ acfm}$$

Furnace dimensions at test location are 14'0" x 14'6" = 203 ft^2.

$$\text{Velocity} = \frac{205{,}200 \text{ acfm}}{203 \text{ ft}^2 \text{ (60 sec/min)}} = 16.8 \text{ ft/sec}$$

Unit 2

Measured at stack (U.S. EPA Methods 1, 2, 3, and 4):

72,400 acfm at 770°R and 16.2% H_2O = 42,000 dscfm at 68°F

Assume 3% air infiltration through air pollution control device system:

42,000 * 0.97 = 40,700 dscfm (at economizer outlet)

Assume 12.1% H_2O at economizer outlet (based on energy testing conducted January 28, 1988).

Volumetric flow rate in furnace:

$$40{,}700 * \left[\frac{460 + 1875°F}{460 + 68°F}\right] * \left[\frac{1}{1-0.121}\right] = 204{,}800 \text{ acfm}$$

Furnace dimensions at test location are 14'0" x 14'6" = 203 ft^2.

$$\text{Velocity} = \frac{203{,}400 \text{ acfm}}{203 \text{ ft}^2 \text{ (60 sec/min)}} = 16.8 \text{ ft/sec}$$

F. 4. Variations from the Temperature Correlation Test Plan

The variations from the Temperature Correlation Test Plan involve collecting volumetric flow rate data from the stack outlet. Since the sampling location at the economizer outlet was not available, moisture content in the economizer outlet gas was used from the energy test program data collected during startup of the facility. Also, a 3% air infiltration through the air pollution control device system is assumed; volumetric flow rates calculated for each furnace reflect this correction.

G. CONCLUSIONS

The measured combustion gas velocity in the refractory zone at the view port where temperature data were collected is estimated to be 16.8 ft/sec. for each unit. This correlates to approximately 1.0 second residence time between the overfire air injection port and the view port, which is 16'1" above the overfire air injection port.

By correlating the temperatures measured at the view port and the uncorrected temperatures measured by the unshielded thermocouple located at the top of the first pass, a Delta T was developed for each unit. This Delta T is used to determine the Trip Point, which will signal activation of the auxiliary burner system when temperature measured by the furnace roof thermocouples approaches within 50°F of the minimum permitted temperature limit. The Trip Point is 1239°F for Unit 1 and 1235°F for Unit 2.

Appendix C

Lake County BMW Permit

TECHNICAL EVALUATION

&

PRELIMINARY DETERMINATION

APPLICANT

Covanta Lake II, Inc.
3830 Rogers Industrial Park Road
Okahumpka, Florida 34762

Lake County Resource Recovery Facility
Facility ID No. 0690046

PROJECT

Co-firing of Biomedical Waste with Municipal Solid Waste (MSW) in Municipal Waste Combustor (MWC) Unit Nos. 1 & 2 (Project)

Draft Permit No. 0690046-019-AC/PSD-FL-113K
Application for Minor Source Air Construction (AC) Permit

COUNTY

Lake County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

March 6, 2018

1. GENERAL PROJECT INFORMATION

1.1. Air Pollution Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following applicable chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Chapters 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations in Rule 62-204.800, F.A.C.

1.2. Glossary of Common Terms

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

1.3. Facility Description and Location

Covanta Lake II, Inc. operates the existing Lake County Resource Recovery Facility (LCRRF), which is categorized under Standard Industrial Classification Code No. 4953. The facility is located in Lake County at 3830 Rogers Industrial Park Road, in Okahumpka, Florida. The UTM coordinates of the existing facility are Zone 17; 413.12 km East; and, 3179.21 km North; Latitude: 28° 44’ 22” North; and, Longitude: 81° 53’ 23” West. **Figure 1** shows the location of Lake County while **Figure 2** shows the location of the LCRRF. **Figure 3** provides a satellite view of the LCRRF.

Figure 1. Location of Lake County.

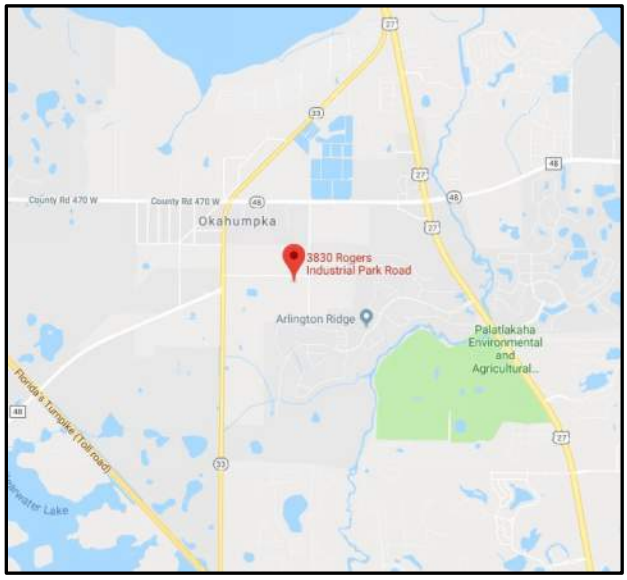

Figure 2. Location of the LCRRF.

Figure 3. Satellite View of the LCRRF.

The LCRRF consists of two identical mass-burn municipal waste combustor (MWC) units (Units 1 and 2) and associated support equipment. Each MWC unit has a nominal capacity of 288 tons of municipal solid waste (MSW) per day (TPD). Each furnace is equipped with an aqueous ammonia (NH_3) injection system based on the principle of selective non-catalytic reduction (SNCR) for nitrogen oxides (NO_X) control. After heat recovery for electricity production, the exhaust gas from each furnace is further cooled by injection of water and slaked lime slurry into a spray dryer absorber (SDA) system where acid gases, such a sulfur dioxide (SO_2) and hydrogen chloride (HCl), react with lime and are converted to solid reaction products. An activated carbon injection (ACI) system after the scrubber is used to control emissions of mercury (Hg), dioxin/furans (D/F) and other hazardous air pollutants. Good combustion practices (GCP) are used to control the emissions of NO_X, carbon monoxide (CO) and volatile organic compounds (VOC). Fly ash, including reaction products from the SDA and ACI systems are removed in a fabric filter baghouse that control emissions of particulate matter (PM) including metals. The exhaust is conveyed via an induced-draft fan into a flue located within the facility stack.

Each MWC unit is equipped with certified continuous emissions monitoring systems (CEMS) for NO_X, SO_2, and CO, and a continuous opacity monitoring system (COMS) to measure visible emissions (VE) from the stack. Annual stack testing is required for PM, HCl, Hg, D/F, cadmium (Cd) and lead (Pb).

Steam output from the two processing trains drives a 15.7-megawatt steam turbine-electric generator.

The fly ash, stoker grate bottom ash and other wastes are combined and transported to a Class I landfill or ash monofill having an in-place bottom liner and leachate collection system. The facility also includes a storage silo for activated carbon and an emergency diesel-fueled fire pump engine, rated at 185 horsepower (HP). Also at the facility are miscellaneous insignificant emission units and/or activities.

A summary of the regulated existing emission units at the Lake County Resource Recovery Facility is given in **Table 1** below.

TABLE 1 - REGULATED EMISSION UNITS AT THE FACILTY.

E.U. ID No.	Brief Description
001	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 1
002	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 2
003	Activated Carbon Storage Silo
004	185-HP Emergency Diesel-Fueled Fire Pump Engine

1.4. Primary Regulatory Categories

1.4.1. Federal Regulations

Federal regulations adopted by reference are given in Rule 62-204.800, F.A.C. State regulations approved by EPA are given in 40 CFR 52, Subpart K – Florida; also known as the State Implementation Plan (SIP) for Florida. The following federal regulations apply to the facility and this project.

- The LCRRF is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality and Rule 62-210.200 (Definitions), F.A.C.
- This project (as discussed in **subsection 2.2**) does not trigger a PSD review and a requirement to conduct Best Available Control Technology (BACT) determinations pursuant to Department Rule 62-212.400, F.A.C. is not required.
- The LCRRF is a major source of hazardous air pollutants (HAP).
- The LCRRF does not have units regulated under Clean Air Act, Title IV, Acid Rain provisions.
- The LCRRF is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The LCRRF is subject to New Source Performance Standards (NSPS) under Section 111 of the Clean Air Act (CAA) and National Emissions Standards for Hazardous Air Pollutants (NESHAP) under Section 112 of the CAA which are incorporated by reference in Chapter 62-204.800, F.A.C.

1.4.2. State Regulations

Projects at stationary sources with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish air quality regulations as part of the Florida Administrative Code (F.A.C.), which includes the applicable chapters contained in **Table 2**:

TABLE 2 - APPLICABLE RULES FROM THE F.A.C.

Chapter	Description
62-4	Permits
62-17	Electrical Power Plant Siting
62-204	Air Pollution Control – General Provisions
62-210	Stationary Sources of Air Pollution – General Requirements
62-212	Stationary Sources – Preconstruction Review

Chapter	Description
62-213	Operation Permits for Major Sources (Title V) of Air Pollution
62-296	Stationary Sources – Emission Standards
62-297	Stationary Sources – Emissions Monitoring

1.5. Project Description

1.5.1. Overview

Shortly after the LCRRF began commercial operation in 1990, the facility's construction permits were modified to allow for the co-firing (less than 10%) of regulated medical waste along with MSW. In accordance with the modified permits, the LCRRF processed medical waste in MWC Unit No. 1 until 1999 and voluntarily ended the medical waste combustion program in 2000.

The facility now desires to re-initiate the medical waste co-firing program. Consequently, the applicant requested the ability to co-fire biomedical waste with MSW in MWC Unit Nos. 1 & 2 to less than 10% by weight (less than 28.8 TPD) of the total amount of MSW combusted by each individual MWC unit. To accomplish this, the minor source AC permit will authorize: the construction of a biomedical waste handling system; the co-firing of biomedical waste with MSW in MWC Unit Nos. 1 & 2; and, revisions to the waste fuel slate for each MWC. In addition, the permit will include specific conditions to provide reasonable assurance that permitted emission limits are being met and that the biomedical was is processed (received, handled, stored and combusted) safely.

1.5.2. Acceptable Biomedical Wastes

Biomedical waste is defined1[1] as:

> *"Any solid or liquid waste which may present a threat of infection to humans, including nonliquid tissue, body parts, blood, blood products, and body fluids from humans and other primates; laboratory and veterinary wastes which contain human disease-causing agents; and discarded sharps. The following are also included:*
>
> *(a) Used, absorbent materials saturated with blood, blood products, body fluids, or excretions or secretions contaminated with visible blood; and absorbent materials saturated with blood or blood products that have dried.*
>
> *(b) Non-absorbent, disposable devices that have been contaminated with blood, body fluids or, secretions or excretions visibly contaminated with blood, but have not been treated by an approved method"*

The regulatory definition cited above is intentionally broad in nature and captures a large universe of medical-field waste streams. However, the applicant recognizes that co-firing of certain biomedical waste streams is best accomplished using technologies not employed at the LCRRF. Accordingly, the LCRRF biomedical waste program will not accept the following subset of non-hazardous biomedical waste streams:

1. EPA hazardous pharmaceutical waste (Nicotine, Warfarin);
2. Human fetal tissue
3. Human remains (fetuses, products of conception and cadavers)
4. Large amounts of free-flowing liquids
5. Radioactive materials
6. Bulk Pathological waste
7. Bulk chemotherapeutic waste
8. Formaldehyde, Iodine or other preservative agents

[1] 64E-16.002(2), F.A.C. and 62-210.200(36), F.A.C.

1.5.3. Biomedical Waste Auditing Procedures

Proper management and handling of biomedical wastes is the responsibility of the medical facility that generates the waste. Once a material is placed into a red bag for disposal, it is difficult and unsafe for either the transporter or the disposal facility to verify the acceptability of the contents. Accordingly, the applicant has developed auditing procedures for the medical facility customers that they work with. These procedures are designed to assist generators with proper biomedical waste handling procedures and to minimize the potential for unacceptable material to be inadvertently delivered to the LCRRF. A copy of these procedures will be included as an appendix of the permit and will be federally enforceable.

1.5.4. Biomedical Waste Feed System

Chapter 64E-16.004(2)(a), F.A.C., requires that packages of biomedical waste remain sealed until treatment. This regulation, in combination with general worker safety concerns, precludes the use of the current crane grapple at the LCRRF as a means of introducing biomedical waste into the combustion units. Accordingly, the applicant intends to construct a single drop automated hopper feed system to transfer biomedical waste from delivery trucks directly to the waste feed chutes of MWC Units 1 and 2. **Figure 4** schematically depicts the proposed hopper feed system.

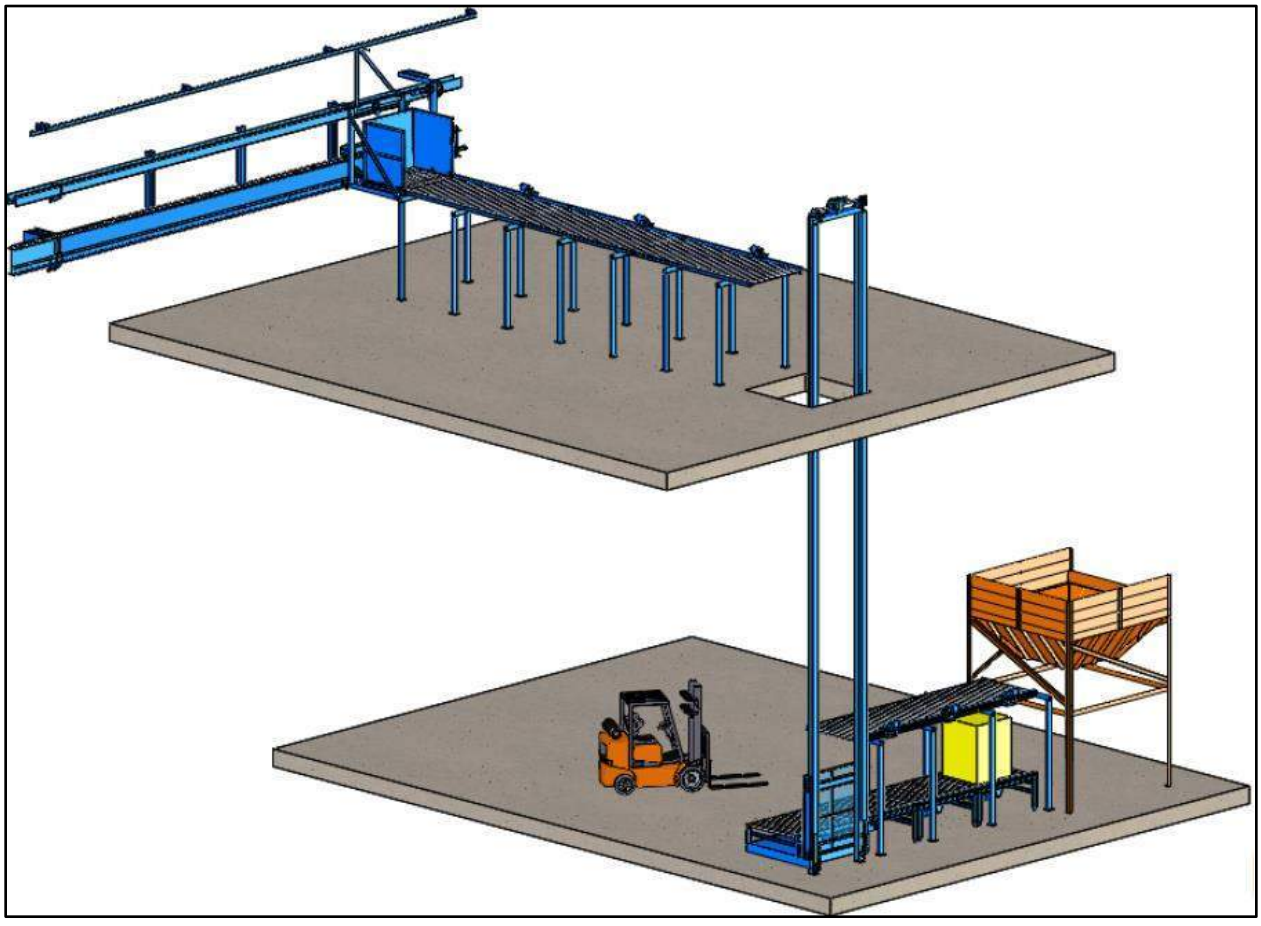

Figure 4. Schematic of Proposed Hopper Feed System.

Boxes of biomedical waste will be manually offloaded on the enclosed tipping floor onto the conveyor system depicted in **Figure 4**. The conveyor system will vertically lift the boxed waste to the charging floor elevation, where it will then be horizontally conveyed by an automated tipping bucket directly into the waste feed chute. Once in the feed chute, the boxes of biomedical waste will mix with MSW and feed by gravity onto the charging table that is integral to each MWC. From the charging table, the waste is

hydraulically pushed into the combustion chamber described in **subsection 1.5.5** below.

As a backup system to the conveyor system, the applicant intends to utilize a similar automated tipping mechanism that will be hoisted by the existing cranes. **Figure 5** depicts the standard orange peel grapple that is used to transfer MSW from the refuse storage pit to the feed chute. At times when the new biomedical waste conveyor system is down for maintenance, or otherwise unavailable, the standard orange peel grapple will be disconnected from one of the two cranes and a tipping mechanism like that depicted in **Figure 6** will be used to transfer containerized biomedical waste from the tipping floor to the feed chute. As with the primary single drop automated hopper feed system, the backup crane operated hoist system will allow packages of biomedical waste to remain sealed until treatment.

Figure 5. Current grapple at the LCRRF.

Figure 6. Tipping Mechanism.

1.5.5. MWC Combustion Chamber Characteristics

The MWC units at the LCRRF utilize Martin Gmbh® combustion technology. **Figure 7** depicts the major components of the Martin combustion system as described in detail below.

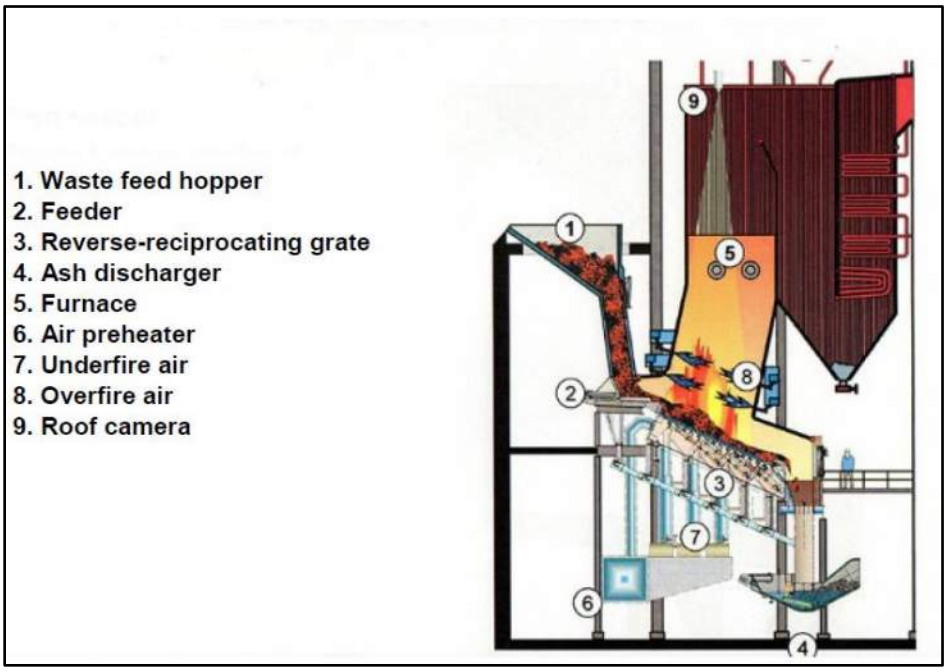

Figure 7. Martin Combustion System.

The process begins when waste is charged to the feed chute depicted at (1) in **Figure 7**. The primary fuel, i.e., MSW, is loaded into the feed chute from the storage bunker via an orange peel grapple. Boxed biomedical waste will be introduced to the feed chute by way of the automated hopper feed system described in **subsection 1.5.4**. The feed chute not only serves as a mechanism for introducing waste into the combustion chamber, but also serves the purpose of providing an airlock to prevent unwanted ambient air into the combustion chamber, as required by Rule 62-296.401(4)(c)(2), F.A.C. From the feed chute, waste is metered into the combustion chamber by hydraulic ram feeders depicted at (2). The feeder system is automatically controlled by a combustion algorithm that monitors critical combustion parameters such as oxygen levels, temperatures, and steam production rate within the boiler. The feeder periodically meters waste onto the combustion grate depicted at (3). The combustion grate, manufactured by Martin Gmbh®, is of reverse reciprocating design, which simultaneously agitates the waste for complete combustion while allowing combustion air (also referred to as underfire air as depicted at (7)) to flow up through the waste. Combustion air is also introduced above the grate in the form of overfire air depicted at (8). The combination of the underfire air and the overfire air is supplied at a rate sufficient to achieve complete combustion of the waste. The residence time of the waste on the combustion grate varies depending on multiple factors but is about 45 minutes. Once the waste is completely combusted it is reduced to combustion ash, which drops via gravity off the end of the grate into the ash discharger depicted at (4). Like the waste feed chute, the ash discharger serves the dual purpose of evacuating combustion residue (ash) from the furnace while providing an airlock to prevent introduction of unwanted ambient air.

Combustion of the waste within the furnace depicted at (5) is accomplished in a single chamber. Initially, heat is applied to the waste through the auxiliary burner. Once combustion of the waste is initiated, liberated heat from the previously fed waste will ignite newly charged waste. As discussed above, the combustion rate is tightly controlled by the amount of air being supplied through the underfire and overfire air systems. The temperature within the combustion zone just above the grate system is designed to be more than 2,000 °F. This temperature will assure that the organic content of the waste is vaporized and that pathological components are destroyed. This temperature also exceeds the minimum design requirement of 1,800 °F specified in Rule 62-296.401(4)(c)(1), F.A.C for Biological Waste Incinerators.

For a description of the Air Pollution Control (APC) equipment for both Units 1 and 2, used to removed contaminates from the flue gas stream generated in the combustion chamber see **subsections 1.3** and **3.1.1**.

1.5.6. Ash Collection

There are two types of ash created from the combustion process at the LCRRF: bottom ash and fly ash. Bottom ash is the ash that is collected from the end of the combustion grate and fly ash is the ash that is collected in the air pollution control system, i.e., baghouse..

Both bottom ash and fly ash are collected in the Martin® ash discharger where they are quenched with water. This combined ash is then periodically expelled from the discharger and conveyed to the Ash Storage Building where it is loaded onto trucks for disposal at a permitted Subtitle D landfill[2]. The combined ash exiting the Ash Storage Building is periodically tested using USEPA sampling protocols to verify that the waste does not exhibit the toxicity characteristic defined at 40 CFR 261.

1.6. Application Processing Schedule

- Application for Air Construction Permit received on December 8, 2017 (complete).
- Draft permit package issued March 6, 2018.

[2] Metal recovery equipment in the Ash Storage Building recovers both ferrous metal and non-ferrous metal from the ash before it is transported to the landfill.

{Documents specifically related to this project are posted and publicly available on the Department's world wide website at the following link Application Documents by clicking the "PUBLIC OCULUS LOGIN" button and by entering the project number shown above into the "Application Number" field in Oculus.}

1.7. Relevant Documents

- Permit No. 0690046-018-AV, Current Title V Air Operation Permit (renewal).
- Permit No. 0690046-015-AC/PSD-L-113J, Biosolids Combustion in Municipal Waste Combustor Unit Nos. 1 & 2 and Waste (Fuel Slate) Revisions.
- Permit No. 0690046-014-AC/PSD-FL-113I, Combustion of Higher Rates of Non-MSW Materials; Waste (Fuel Slate) Revisions & Miscellaneous Revision.
- Permit No. 0690046-003-AC/PSD-FL-113E, Waste (Fuel Slate) Revisions.

2. RULE REQUIREMENTS

2.1. General PSD Applicability

For areas currently in attainment with the AAQS or areas otherwise designated as unclassifiable, the Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. Under preconstruction review, the Department first must determine if a project is subject to the PSD requirements ("PSD applicability review") and, if so, must conduct a PSD preconstruction review. A PSD applicability review is required for projects at new and existing major stationary sources. In addition, proposed projects at existing minor sources are subject to a PSD applicability review to determine whether potential emissions *from the proposed project itself* will exceed the PSD major stationary source thresholds. A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant; or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the following 28 PSD-major facility categories: fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants and charcoal production plants.

Once it is determined that a project is subject to PSD preconstruction review, the project emissions are compared to the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: CO; NOx; SO_2; PM; PM with a mean particle diameter of 10 microns or less (PM_{10}); $PM_{2.5}$; volatile organic compounds (VOC); lead (Pb); fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and HCl; municipal solid waste landfills emissions measured as non-methane organic compounds (NMOC); and Hg. In addition, significant emissions rate also means any emissions rate or any net emissions increase associated with a major stationary source or major

modification which would construct within 10 kilometers of a Class I area and have an impact on such area equal to or greater than 1 micro grams per cubic meter ($\mu g/m^3$), 24-hour average.

If the potential emission equals or exceeds the defined significant emissions rate (SER) of a PSD pollutant, the project is considered "significant" for the pollutant and the applicant must employ the Best Available Control Technology (BACT) to minimize the emissions and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants. **Table 3** lists the PSD SERs applicable to the facility.

TABLE 3 - LIST OF SIGNIFICANT EMISSION RATES BY PSD-(AIR) POLLUTANT RELEVANT TO THE FACILITY.

Pollutant	SER (tons/year)	Pollutant	SER (tons/year) [4]
CO	100	NO_X	40
$PM/PM_{10}/PM_{2.5}$	25/15/10	Ozone (VOC) [2]	40
$PM_{2.5}$ (NO_X)	40	$PM_{2.5}$ (SO_2)	40
Ozone (NO_X) [2]	40	SAM	7
SO_2	40	Pb	0.6
Hg	0.1	Fluoride (F)	3
MWC metals as PM	15	MWC acid gases as SO_2 & HCl	40
MWC organics as dioxin/furan	3.5×10^{-6}	GHGs (total mass basis)	0 [3]

1. Excluding pollutants specific to the Pulp and Paper industry and MSW landfills.
2. Ozone (O_3) is regulated by its precursors (VOC and NO_X). PSD for $PM_{2.5}$ can be triggered by its precursors (NO_X and SO_2).
3. Pursuant to 40 CFR 52.21(b)(23)(ii), pollutants with no SER listed at 40 CFR 52.21(b)(23)(i) have a SER of zero tons/year.
4. SER also means any emissions rate or any net emissions increase associated with a major stationary source or major modification which would construct within 10 km of a Class I area and have an impact on such area equal to or greater than 1 $\mu g/m^3$, 24-hour average.

2.2. PSD Applicability for the Proposed Project

The LCRRF is an existing major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD). As the applicant indicated in the application on page 4-3 the proposed project, specifically the co-firing of biomedical waste with MSW in the MWC Unit Nos. 1 & 2, is a 'modification' to emission units at an existing major stationary source -

> "… *The co-firing of biomedical waste in the MSW combustors at the Lake County facility will qualify as a 'modification' because it meets the criteria of a 'change in the method of operation' that may "increase the amount of an air pollutant.' …*"

Since this is a 'modification' to an existing major stationary source, a PSD Applicability Analysis is required to determine whether or not PSD is triggered. The "Baseline Actual-to-Projected Actual Applicability Test for Modifications at Existing Emissions Units" from Rule 62-212.400(2)(a)1., F.A.C. is required to be used. Basically, baseline actual emissions (BAEs) are compared to future emissions or referred to as projected actual emissions (PAEs). An increase in emissions of a PSD pollutants that equals or exceeds its SER results in PSD being triggered.

Table 4 summarizes the Applicant's PSD applicability analysis for the project.

TABLE 4- SUMMARY OF THE APPLICANT'S PSD APPLICABILITY FOR THE PROJECT.[1]

PSD-(Air) Pollutant	Baseline Actual Emissions, TPY (tons/year)	Projected Actual Emissions, TPY	Increase (+)/Decrease (-) in Emissions, TPY	PSD SER, TPY	PSD SER exceeded?
PM	1.22	1.22	0	25	**No**

PSD-(Air) Pollutant	Baseline Actual Emissions, TPY (tons/year)	Projected Actual Emissions, TPY	Increase (+)/Decrease (-) in Emissions, TPY	PSD SER, TPY	PSD SER exceeded?
PM_{10}	1.22	1.22	0	15	**No**
$PM_{2.5}$	1.22	1.22	0	10	**No**
Pb	0.007	0.007	0	0.60	**No**
Hg	ND[2]	ND		0.1	**No**
F[3]	---	---	---	---	**N/A[4]**
NOx	495.31	495.31	0	40	**No**
CO	16.87	16.87	0	100	**No**
VOC	1.69	1.69	0	40	**No**
SO_2	5.67	5.67	0	40	**No**
SAM[5]	---	---	---	---	**N/A[4]**
MWC acid gases [SO_2 + HCl]	22.77	22.77	0	40	**No**
MWC organics [dioxins/furans]	5.0E-05	5.0E-05	0	3.5E-06	**No**
MWC metals	1.22	1.22	0	15	
Total GHGs (CO_2e)	-	-	-	75,000[6]	**No**

1. The values are for the two MWC units combined as those are the emissions units involved with the modification, i.e., the co-firing of biomedical waste with MSW in the MWC Unit Nos. 1 & 2.
2. ND = non-detect.
3. The LCRRF does not have a Fluoride emission limit.
4. N/A = Not applicable.
5. The LCRRF does not have a SAM emission limit. Also, since SO_2 is well below its SER, it is reasonable to assume there is a minimal increase in SAM emissions.
6. According to guidance3 issued by the EPA in July 2014, a source cannot become subject to PSD review solely based on GHG emissions. a source that triggers PSD review for a traditional PSD pollutant (listed above) would also trigger a PSD review for greenhouse gases (GHGs) if the source would emit or have the potential to emit 75,000 tons per year of GHGs on a carbon dioxide-equivalent basis. Under this framework, the project does not trigger a PSD review for a traditional PSD pollutant, therefore a PSD review is not required for GHG emissions.

As shown in **Table 4**, the project emissions will not equal or exceed the SERs for PSD applicability. Based on what the applicant has provided and based on the Department's review, it is not expected that there will be a SER increases for any PSD pollutant because of this project. The project therefore is not subject to PSD preconstruction review.

3. DEPARTMENT REVIEW

3.1. Background

3.1.1. Pollution Control

The LCRRF was originally permitted in 1986 under Permit No. AC35-115379/PSD-FL-113 and began commercial operation on August 22, 1990. A typical mass burn, waste-to-energy facility process

[3] U.S. Supreme Court opinion dated June 23, 2014. Link to Supreme Court Opinion EPA guidance dated July 24, 2014. Link to EPA Guidance

overview is posted and available on Covanta's website.[4] MWC Unit Nos. 1 & 2 are identical mass-burn municipal solid waste combustors. Air pollutant emissions are well controlled at the LCRRF. Air Pollutant Control (APC) equipment and practices on each unit include:

- A SNCR system for the control of NO_X emissions;
- GCP to minimize NO_X, CO and VOC emissions;
- A SDA system for the control of acid gas emissions (i.e., SO_2, HCl, hydrogen fluorides (HF), SAM);
- An ACI system for the control of Hg, D/F and other hazardous air pollutant emissions; and,
- A baghouse filter system for the control of PM (including metals) and Hg emissions.

As already indicated, air pollutant emissions of SO_2, NO_X and CO from each unit are monitored by CEMS, while stack testing is performed for: PM, Cd, Hg, Pb, HCl and D/F.

3.1.2. Biomedical Waste Incineration

"Biomedical waste" is defined in the DEP's air pollution rules in Chapter 62-210.200, F.A.C (Link to 62-210.200) and in the Department of Health's (DOH's) Biomedical Waste Program rule, specifically in Chapter 64E-16, F.A.C (Link to 64E-16). In the U.S. EPA federal regulations covering air pollutant emissions from MWCs (the Emission Guidelines 40 CFR 60, Subpart Cb for 'existing' MWCs, Link to Subpart Cb), MSW does not include medical waste. It is widely known that medical waste is not part of the MSW stream. MSW's typical composition is shown by the following pie chart from U.S. EPA given in **Figure 8**.

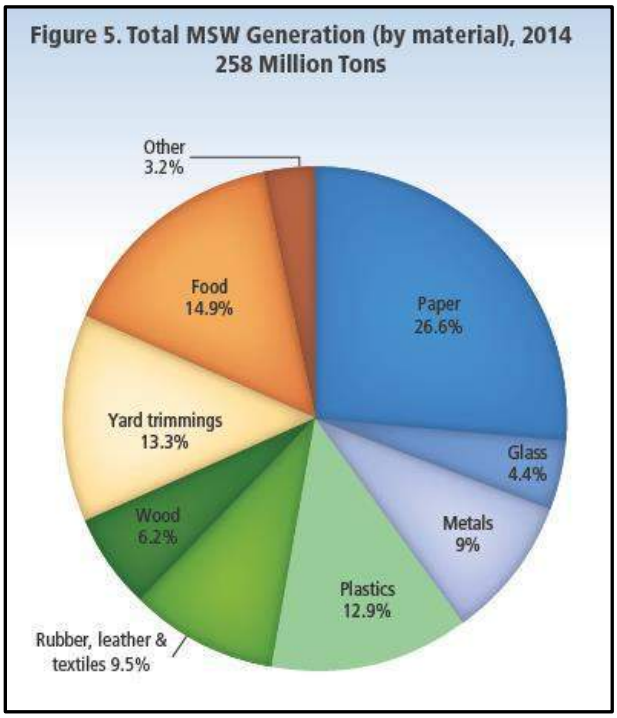

Figure 8. Typical Composition of MSW.

Therefore, EPA does not consider "biomedical waste" or "medical waste" to be included in the MSW definition, in other words as part of the typical MSW going to an MWC. Although biomedical waste is not considered to be part of the typical MSW, the federal regulations of 40 CFR 60, Subparts Cb/Eb do

[4] Covanta. World Wide Web Site - Diagram of the energy-from waste process: http://www.covanta.com/en/services/technologies/energy-from-waste.aspx. Accessed on 08/25/2014.

not prohibit it from being combusted in an MWC.[5] Specifically, a MWC that meets the definition of a co-fired combustor is exempt from federal Hospital/Medical/Infectious Waste Incinerators (HMIWI) rules. The definition (defined in §60.51c) of a co-fired combustor is:

> *Co-fired combustor* means a unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.

In general, a co-fired combustor is not subject to a HMIWI rule if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

If a MWC unit does not meet the definition of a co-fired combustor it would become subject to one of the HMIWI rules:

- Subpart Ce - Emission Guidelines and Compliance Times for Municipal Waste Combusters That Are Constructed on or Before December 19, 1995; or
- Subpart Ec - Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction Is Commenced After June 20, 1996.

3.1.3. General - Sources of Biomedical Waste

An estimated 3.4 million tons of medical waste are generated annually in the United States from hospitals, veterinary facilities, pharmaceutical companies, medical research facilities, nursing homes, and other facilities. These wastes include both infectious ("red bag") medical wastes as well as non-infectious, general housekeeping wastes.[6]

Medical waste also includes wastes generated at physicians' offices, dental practices and blood banks. Generally, medical waste is healthcare waste that that may be contaminated by blood, body fluids or other potentially infectious materials and is often referred to as regulated medical waste.[7]

3.1.4. General - Biomedical Waste Disposal in Florida

According to the U.S. EPA, more than 90 percent of potentially infectious medical waste was incinerated before 1997. Potential alternatives to incineration of medical waste include the following:

- Thermal treatment, such as microwave technologies;
- Steam sterilization, such as autoclaving;

[5] U.S. EPA Federal Register, Volume 60, No. 243, page 65392, dated December 19, 1995. Preamble to amendments for 40 CFR 60 Subparts Cb/Eb. Municipal solid waste definition discussion. Accessed in 01/2012.

[6] U.S. EPA's AP 42, Fifth Edition, Volume I, Chapter 2: Solid Waste Disposal. Final Section & Background Document for Medical Waste Incineration. U.S. EPA World Wide Web Site:

https://www3.epa.gov/ttn/chief/ap42/ch02/final/c02s03.pdf &

https://www3.epa.gov/ttn/chief/ap42/ch02/bgdocs/b02s03.pdf. Accessed in 01/11/2017.

[7] U.S. EPA's Medical Waste web page. U.S. EPA World Wide Web Site: https://www.epa.gov/rcra/medical-waste. Accessed in 01/11/2017.

- Electro pyrolysis; and,
- Chemical mechanical systems, among others.[8]

The DOH lists 15 commercial biomedical waste treatment facilities in Florida. Thirteen (13) of the 15 facilities are autoclaves, one (1) is an alternative (thermal friction) and one (1) is an incinerator. None of the ten operating MWC facilities in Florida are currently permitted to accept and combust segregated loads of biomedical waste.

3.1.5. General - Medical Waste Incineration

Three main types of incinerators are used: controlled air, excess air, and rotary kiln. The primary purposes for incinerators are to: 1) reduce the hazard associated with the waste; and 2) reduce the volume and mass of the waste. These objectives are accomplished by exposing the waste to high temperatures over a sufficiently long period of time to destroy threatening organisms and burn the combustible portion of the waste.[9]

3.1.6. Biomedical Waste Heat Content Value

Biomedical waste has a slightly higher heating value than MSW. For information purposes, **Table 5** below compares the heat content value of biomedical waste to other materials.

TABLE 5- HEAT CONTENT VALUE OF BIOMEDICAL WASTE COMPARED TO OTHER SOLID WASTES/FUELS.

Biomedical Waste	MSW)	Distillate oil	Tires	Coal (bituminous)
8,500 Btu/lb[10]	5,000 Btu/lb	19,910 Btu/lb	15,800 Btu/lb	12,500 Btu/lb

3.2. Air Pollutant Emissions while Co-firing of Biomedical Waste

The applicant provided stack test results from a similar MWC plant (two units, each at 288 TPD) in the U.S. while co-firing biomedical waste: the Covanta-Marion plant located in Brooks, Marion County, Oregon. The stack testing on Unit 1 were performed at the plant in August 2017. The quantity of biomedical waste co-fired during the stack testing was about 2% of the total MSW capacity. Stack test data while no biomedical waste was being fired was retrieved by the Department from the State of Oregon. Consequently, stack test data while co-firing biomedical waste with MSW can be compared to stack tests when there is no co-firing of biomedical waste with MSW. **Table 6** summarizes this comparison.

TABLE 6- COVANTA-MARION PLANT: COMPARING STACK TEST DATA TO WHILE CO-FIRING BIOMEDICAL WASTE WITH MSW.

Parameter/Air Pollutant	Units for the Parameter/Air Pollutant [1]	Air Pollutant Standards/Limits	Stack tests <u>while not</u> co-firing biomedical waste 2014-2016 years (3-year avg.) [2]	Stack tests <u>while</u> co-firing biomedical waste August 2017 [2]	Change increase (+)/ decrease (-)
Opacity	%	10	ND	ND	-
Particulate	mg/dscm @ 7% O_2	25	3.47 (13.9%)	3.31 (13.2%)	-0.16

[8] U.S. EPA's Medical Waste web page. U.S. EPA World Wide Web Site: https://www.epa.gov/rcra/medical-waste. Accessed in 01/12/2017.

[9] U.S. EPA's AP 42, Fifth Edition, Volume I, Chapter 2: Solid Waste Disposal. Final Section & Background Document for Medical Waste Incineration. U.S. EPA World Wide Web Site: https://www3.epa.gov/ttn/chief/ap42/ch02/bgdocs/b02s03.pdf. Accessed in 01/12/2017.

[10] U.S. EPA's AP 42, Fifth Edition, Volume I, Chapter 2: Solid Waste Disposal. Final Section & Background Document for Medical Waste Incineration. U.S. EPA World Wide Web Site: https://www3.epa.gov/ttn/chief/ap42/ch02/bgdocs/b02s03.pdf. Accessed in 01/12/2017.

Matter (PM)					
Cadmium (Cd)	mg/dscm @ 7% O_2	0.02	0.0008 (4%)	0.000915 (4.6%)	+0.000115
Lead (Pb)	mg/dscm @ 7% O_2	0.2	0.0069 (3.5%)	0.00403 (2%)	-0.00287
Mercury (Hg)	mg/dscm @ 7% O_2	0.050	ND (N/A)	0.00300 (6%)	+0.003
Hydrogen Chloride (HCl)	ppm @ 7% O_2	29	13 (68.4%)	7.83 (27%)	-5.17
Dioxin/Furans (PCDD/PCDF)	µg/dscm @ 7% O_2	15	0.576 (3.8%)	0.400 (2.7%)	-0.176
Carbon Monoxide [3] (CO)	ppm @ 7% O_2	100	11 (11%)	15 (15%)	+4
Sulfur Dioxide (SO_2) [4]	ppm @ 7% O_2	29	10 (34.5%)	1 (3.4%)	-9
Nitrogen Oxides (NOx) [5]	ppm @ 7% O_2	205	177 (86.3%)	179 (87.3%)	+2

Notes:
1. mg/dscm @ 7% O_2 means milligram per dry standard cubic meter, corrected to 7 percent oxygen; µg/dscm @ 7% O_2 means micrograms per dry standard cubic meter, corrected to 7 percent oxygen; ppm @ 7% O_2 means parts per million by volume, dry, corrected to 7% O_2.
2. Number is parenthesis is the percentage the stack test result is relative to the emission limit.
3. Expressed as a 4-hr average per 40 CFR 60, Subpart Cb.
4. Expressed as a 24-hr geometric average per 40 CFR 60, Subpart Cb.
5. Expressed as a 4-hr arithmetic average per 40 CFR 60, Subpart Cb.

Based on the test results shown in **Table 6**, the effects on air pollutant emissions while co-firing biomedical waste (2% by weight) with MSW in the MWC unit were minimal. All polluatnt stack tests, either while or not firing biomedical waste, were well below their respective emission limits; closest to the limit was NO_X at ~85%. Note, at the LCRRF NO_X emissions are continuously monitored.

The differences between stack test results, while firing and not firing biomedical waste, were very small and showed no discernible trend, e.g.., an increase in emissions when firing biomedical waste. In addition, some variability in stack test results when only firing MSW should be expected because MSW is not a homogenous fuel. Consequently, the variations between the stack test results in **Table 6** could be attributable to variations in the MSW being combusted while the stack testing was taking place.

The Department acknowledges that stack test results presented in **Table 6** were at a biomedical firing rate of 2% by weight compared to the applicant's requested limit of less than 10%. However, the Department does not feel that pollutant emissions will increase significantly even at the higher firing rate of less than 10% for the following reasons:

1. The high combustion temperatures (~ 2,000 °F) in the MWC units will oxidize and destroy the components of the biomedical waste turning them into their elemental components that subsequently will be control by the unit's APC systems;
2. At 2% by weight, as demonstrated by the stack test results in **Table 6**, the effect of biomedical waste on pollutant emissions was not discernable; and
3. As described in **subsections1.3** and **3.1.1**, the extensive APC equipment and procedures (SNCR, GCP, ACI, SDA and baghouse) on each MWC unit should effectively limit any possible increase in emissions while firing biomedical waste at a rate of less than 10% by weight.

3.3. NSPS/NESHAP Applicability for the Proposed Project

MWC Unit Nos. 1 & 2 are regulated under the federal 40 Code of Federal Regulations (CFR) 60, Subpart Cb, Emissions Guidelines (EG) and Compliance Times for Large Municipal Waste Combustors. The applicant addressed New Source Performance Standards (NSPS) of 40 CFR 60 applicability in Section 5.1.3, pages 5-1 through 5-4 of the application. Subpart Cb is a requirement of Section 129 of the CCA and consequently addresses both NSPS and NESHAP requirements. No additional NSPS or NESHAP requirements apply to the proposed project. The Department concurs with the applicant's assessment of NSPS and NESHAP applicability.

3.4. State of Florida, Stationary Source Requirements

The Department through Chapter 62-296, F.A.C. established emission limiting standards and compliance requirements for stationary sources of air pollutant emissions. This chapter includes emission limitations for specific categories of facilities and emissions units. Rule 62-296.401(4), F.A.C. for Biological Waste Incinerators (BWI) applies to the LCRRF when co-firing biomedical waste with MSW in the MWC units. Rule 62-296.401(4), F.A.C. for Biological Waste Incinerators only contains specific air emission standards/limits for PM, HCl & CO emissions. A summary of the specific air emission standards/limits is shown in **Table 7** along with the corresponding Subpart Cb requirements.

TABLE 7 - COMPARISON OF RULE 62-296.401(4), F.A.C. FOR BIOLOGICAL WASTE INCINERATORS TO EXISTING PERMIT STANDARDS/LIMITS FOR THE PROJECT.

Basis	PM	HCl	CO
Rule 62-296.401(4), F.A.C. for Biological Waste Incinerators	0.020 gr/dscf, corrected to 7% O_2 {46 mg/dscm} by stack test	50 ppmv, corrected to 7% O_2 by stack test or $\geq$ 90% reduction	100 ppmv, corrected to 7% O_2, 1-hour average
40 CFR 60 Subpart Cb/existing permit standards/limits	25 mg/dscm by stack test	29 ppmv, corrected to 7% O_2 by stack test or $\geq$ 95% reduction	100 ppmv, corrected to 7% O_2, 4-hour block average

After reviewing the values provided in **Table 7**, one can see that the specific air emission standards/limits for PM, HCl & CO emissions from Subpart Cb are more stringent than the state requirements, except for the averaging period for CO emissions. The applicant indicated that the CEMS equipment for each MWC unit will be configured to calculate CO emissions over a 1-hour averaging period when the unit is co-firing biomedical waste {see page 6-1 of the application}.

The state BWI Rule (62-296.401(4)(c)1., F.A.C.) requires that when the MWC units co-fire biomedical waste with MSW that they "… *operate with a combustion zone design temperature of no less than 1,800 degrees Fahrenheit for at least a 1.0 second gas residence time in the secondary (or last) combustion chamber. The primary chamber and stack volumes shall not be utilized in calculating this residence time*."

To provide reasonable assurances that the minimum combustion zone temperature and combustion chamber residence time specified at BWI Rule are met, the LCRRF conducted a temperature correlation study in 1991. The purpose of the study was to correlate combustion zone temperatures (which are not continuously monitored) with furnace roof temperatures (which are continuously monitored). A handheld infrared monitoring device was utilized to record temperatures at various elevations within the furnace, starting at the combustion zone and progressing up towards the furnace roof (where the conditions can sustain permanent thermocouple placement). Using the data from the measurements, it was concluded that a combustion zone temperature of 1,800 °F correlates to a temperature of 1,138 °F at the furnace roof.

The 1991 measurements were also used to calculate a combustion chamber residence time of approximately 1.5 seconds. A copy of the measurements and calculations were provided in Appendix E of the application. T

3.5. Permit Requirements

The following will be included as requirements in the draft air construction permit

3.5.1. Combustion Zone Temperature

A specific condition will be added to the permit to require that the applicant install, calibrate, operate and maintain a temperature monitor for the furnace roof. In addition, to ensure that the combustion zone temperature is equal to or greater than 1,800 °F, the furnace roof temperature shall be above 1,138 °F with a residence time of not less than 1.5 seconds to meet the requirements of the BWI Rule. The other requirements from BWI Rule will also be included in the permit.

3.5.2. Unacceptable Biomedical Wastes

A permit condition will specify that the following biomedical waste are not acceptable:

1. EPA hazardous pharmaceutical waste (nicotine, warfarin);
2. Human fetal tissue;
3. Human remains (fetuses, products of conception and cadavers);
4. Large amounts of free-flowing liquids;
5. Radioactive materials;
6. Bulk pathological waste;
7. Bulk chemotherapeutic waste; and,
8. Formaldehyde, iodine or other preservative agents.

These exclusions are specifically added to the waste/fuel slate.

3.5.3. Waste (Fuel Slate) Requested Changes

Specific changes to the waste (fuel slate) specific conditions in the current valid Title V air operation permit No. 0690046-018-AV are necessary as part of the request to co-fire biomedical waste with MSW in MWC Unit Nos. 1 & 2. These specific conditions contain very specific types and descriptions of fuels/wastes allowed to be combusted and those not allowed to be combusted in MWC Unit Nos. 1 & 2. The Department's review indicates that **Specific Condition A.5.** of the current Title V air operation permit No. 0690046-018-AV originates from **Specific Conditions 1.e.** of an AC/PSD permit, 0690046-003-AC/PSD-FL-113E which has been revised since. Because the waste (fuel slate) permit specific condition originates from an underlying AC/PSD permit, this permit specific condition cannot be revised in the Title V air operation permit; the underlying AC/PSD permit must be revised. As part of the applicant's request the underlying AC/PSD permit will be revised.

3.5.4. Waste Auditing Procedures

The applicant has developed auditing procedures for the medical facility customers that they work with. These procedures are designed to assist generators with proper biomedical waste handling procedures and to minimize the potential for unacceptable material to be inadvertently delivered to the facility. A copy of these procedures will be included in the permit. The permit will require that the auditing procedures include in the permit be further developed into BMPs that shall be submitted to the Permitting and Compliance Authority for approval at least 90 days prior to any biomedical waste being fired at the LCRRF. These BMPs will be incorporated in to the Title V air operation permit for the LCRRF. In addition, a record of the waste characterization is required to be kept at the facility

3.5.5. Handling, Storage and the Co-firing of Biomedical Waste with MSW in the MWC Units

Subsection 1.5.4 describes how biomedical waste will be manually offloaded from delivery trucks onto a conveyor system. Best management practices (BMP) in the handling and any storing of biomedical waste need to be developed and implemented by the applicant. A requirement to develop such BMP is included in the permit. These BMPs will be incorporated in to the Title V air operation permit for the LCRRF

Subsection 1.5.4 also describes how biomedical waste will then be fed by proposed new conveyors into a feed chute where it will be mixed with MSW prior to being combusted in the MWC units. BMP in the co-firing of biomedical waste with MSW need to be followed by the applicant. A requirement to develop such BMP is included in the permit. These BMPs will be incorporated in to the Title V air operation permit for the LCRRF.

A concept graphic of the "Single Drop Automated Hopper Feed" system is given **Subsection 1.5.4**. A final photo of the actual system(s) installed is required by the permit.

To provide reasonable assurances that BMPs in the handling, storage and the co-firing of biomedical waste with MSW in the MWC Units at the LCRRF are followed, a requirement to develop a training plan for plant personnel (includes plant operators) is included in the permit. The training plan will be incorporated in to the Title V air operation permit for the LCRRF.

To ensure compliance with the less than 10% by weight biomedical waste co-firing restriction, each day, the total weight of biomedical waste received that is subject to the 10% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of biomedical waste shall be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 10% limitation. Note these restrictions are more stringent than the co-fired combustor definition which is on a 10% or less weight basis and a quarterly not a monthly basis.

3.5.6. Testing Requirements

To evaluate PM, Cd, Pb, Hg, HCl and dioxin/furan emissions and to demonstrate compliance with the existing emission standards/limits while co-firing biomedical waste with MSW, stack tests will be required for PM, Cd, Pb, Hg, HCl and dioxin/furan emissions.

To evaluate VE and to demonstrate compliance with the VE standard/limit while co-firing biomedical waste with MSW a VE test will be required. The VE test is fulfilled by submitting COMS data for VE.

To evaluate SO_2, NOx and CO emissions and to demonstrate compliance with the SO_2, NOx and CO emission standards/limits while co-firing biomedical waste with MSW an SO_2, NOx and CO test will be required. This testing requirement is fulfilled by submitting CEMS data for SO_2, NOx and CO emissions.

3.5.7. Odor Control

Odors from the MWC facility are controlled by drawing combustion air from the refuse tipping floor area. The applicant proposes to unload and store biosolids within the building enclosing the tipping floor. Odors from the unloaded and stored biosolids within the building should be drawn into the combustion air.

3.5.8. Pathogenic Emissions

Pathogenic destruction occurs in a combustion process. The combustion of biomedical waste that is co-fired with MSW material takes place in the furnaces. Additionally, gases containing potentially

pathogens pass through the SNCR systems with temperatures around 1,600-2,100 degrees F with a residence time of 1-2 seconds.[11]

In comparison, medical waste incinerator temperatures within a dual chamber unit have secondary chambers (afterburners) which operate between 1,600-1,800 degrees F. Residence times in secondary chambers (afterburners) are typically 1.0 seconds. The Department's BWI Rule contains temperature and residence time requirements.

Obviously, biomedical waste is different from municipal solid waste (MSW). However, the temperature and residence time in an MWC's combustion zone in the furnaces and in the SNCR should be more than adequate to provide complete pathogen destruction resulting in exhaust gases free of pathogens.

The spread of pathogens could occur when improperly storing, handling and mixing of biomedical waste. As indicated in **subsection 3.5.5**, conditions in the permit will require the development of BMPs for proper storage, handling and mixing of biomedical waste.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state rules and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions.

Mr. Scott M. Sheplak, CPM, P.E. is the permit processor responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting him in the Department's Office of Permitting and Compliance at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. He may be contacted by telephone at 850/717-9074 or by e-mail at scott.sheplak@dep.state.fl.us.

[11] A&WMA Air Pollution Engineering Manual. Waste Incineration, SNCR. 1992.

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

PERMITTEE

Covanta Lake II, Inc.
3830 Rogers Industrial Park Road
Okahumpka, Florida 34762

Authorized Representative:
Mr. Gary Main, Facility Manager

Air Permit No. 0690046-019-AC/PSD-FL-113K
Permit Expires: March 31, 2020
Minor Air Construction Permit
Lake County Resource Recovery Facility
Co-firing of Biomedical Waste with MSW in MWC Unit Nos. 1 & 2
Lake County, Florida

PROJECT

This is the final air construction permit, which authorizes: the construction of a biomedical waste handling system; the co-firing of biomedical waste with MSW in MWC Unit Nos. 1 & 2; and, for revisions to the waste (fuel slate) (Project). The proposed work will be conducted at the existing Lake County Resource Recovery Facility, which is an existing municipal waste combustor facility categorized under Standard Industrial Classification No. 4953. The existing facility is in Lake County at 5901 Young Pine Road in Orlando, Florida. UTM coordinates are: Zone 17; 413.12 km East; and, 3179.21 km North; Latitude: 28° 44' 22" North; and, Longitude: 81° 53' 23" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

David Lyle Read, P.E.
2018.03.27 13:47:27 -04'00'

For:

Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

SA/dlr/sms

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the persons listed below.

Mr. Gary Main, Covanta Lake II, Inc.: gmain@covantaenergy.com
Mr. Jason M. Gorrie, P.E., JMG: jason@jmg-eng.com
DEP CD Office: DEP_CD@dep.state.fl.us
U.S. EPA Region 4: R4TitleVFL@epa.gov & NSRsubmittals@epa.gov
Ms. Barbara Friday, DEP OPC: barbara.friday@dep.state.fl.us
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

2018.03.27 14:42:12 -04'00'

FACILITY DESCRIPTION

This facility consists of two identical mass-burn municipal waste combustor (MWC) units (Units 1 and 2) and associated support equipment. Each MWC unit has a nominal capacity of 288 tons of waste per day. Each furnace is equipped with an aqueous ammonia (NH_3) injection system based on the principle of selective non-catalytic reduction for nitrogen oxides (NO_X) control. After heat recovery for electricity production, the exhaust gas from each furnace is further cooled by injection of water and slaked lime slurry into a spray dryer absorber (scrubber) where acid gases react with lime and are converted to solid reaction products. Activated carbon is injected after the scrubber for mercury (Hg) and dioxin/furan (D/F) control. Fly ash, including reaction products from the scrubber and the spent activated carbon are removed in a fabric filter baghouse. The exhaust is conveyed via an induced-draft fan into a flue located within the facility stack.

Each MWC unit is equipped with continuous emissions monitoring systems (CEMS) for NO_X, sulfur dioxide (SO_2), and carbon monoxide (CO), and a continuous opacity monitoring system (COMS). Annual stack testing is required for particulate matter (PM), hydrogen chloride (HCl), Hg, D/F, cadmium and lead.

Steam output from the two processing trains drives a 15.7-megawatt steam turbine-electric generator. The fly ash, stoker grate bottom ash and other wastes are combined and transported to a Class I landfill or ash monofill having an in-place bottom liner and leachate collection system.

The facility also includes a storage silo for activated carbon and an emergency diesel-fueled fire pump engine, rated at 185 horsepower (HP). The fire pump engine is regulated under 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) adopted in Rule 62-204.800(11)(b), F.A.C.

Also at the facility are miscellaneous insignificant emission units and/or activities.

Covanta Lake, Inc. a subsidiary of Covanta Energy Corporation owns and operates this existing facility.

A summary of the regulated existing emission units at the facility is given in table below.

E.U. ID No.	Brief Description
001	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 1
002	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 2
003	Activated Carbon Storage Silo
004	185-HP Emergency Diesel-Fueled Fire Pump Engine

PROPOSED PROJECT

This project is for a minor source air construction (AC) permit. The minor source AC permit is for: the construction of a biomedical waste handling system; the co-firing of biomedical waste with MSW in MWC Unit Nos. 1 & 2; and, for revisions to the waste (fuel slate).

MWC Unit Nos. 1 & 2 each has a charging rate (short-term) of 288 TPD of municipal solid waste (MSW). The permittee requested the ability to co-fire biomedical waste with MSW in MWC Unit Nos. 1 & 2 to less than 10% by weight of the total amount of waste combusted by each individual MWC unit; this is equivalent to a maximum mass of less than 28.8 tons per day (TPD) per MWC unit.

Specifically, this permit authorizes the following subprojects comprising the "project:"

1. Construction of a biomedical waste handling system;
2. Co-firing of biomedical waste with MSW in MWC Unit Nos. 1 & 2; and,
3. Revisions to the waste (fuel slate).

Details of the project are provided in the application and the Technical Evaluation & Preliminary Determination.

REGULATORY CLASSIFICATION

Title III: The facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The facility does not operate units subject to the acid rain provisions of the Clean Air Act.

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major stationary source in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 CFR 60.

NESHAP: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Office of Permitting and Compliance (OPC) in the Division of Air Resource Management of the Department. The mailing address for the OPC is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the OPC Section.

2. Compliance Authority: All documents related to compliance activities, such as reports, tests, and notifications, shall be submitted to the Compliance Authority. The Compliance Authority is listed on the cover page of the Title V air operation permit.

3. Appendices: The following Appendices are attached as part of this permit:
   a. Appendix A. Citation Formats and Definitions;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions;
   d. Appendix D. Common Testing Requirements; and,
   e. Appendix E. Biomedical Waste Vendor Auditing Procedures.

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Source Obligation: At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification. [Rule 62-212.400(12), F.A.C.]

8. Construction: This permit authorizes the Project and the initial operation to determine compliance with Department rules. The permittee, for good cause, may request that this construction permit be extended. Such a request shall be submitted to the Department's Office of Permitting and Compliance prior to the expiration of this permit. [Rules 62-210.300(1), 62-4.070(4) 62-4.080, and 62-4.210, F.A.C.]

A. Municipal Solid Waste Combustor & Auxiliary Burners for Units 1 &2 - E.U. ID Nos. 001 & 002

This section of the permit addresses the following emissions unit.

E.U. ID No.	Brief Description
001	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 1
002	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 2

The original PSD-FL-113 (1986) authorized the construction of municipal solid waste combustor Unit Nos. 1 & 2. The original PSD-FL-113, was amended by PSD-FL-113E, H & I, adding/revising waste (fuel slate) specific conditions.

This subsection of the permit authorizes the co-firing of biomedical waste with MSW in MWC Unit Nos. 1 & 2 and the construction of a biomedical waste handling system. New equipment associated with this project is authorized in this subsection of the permit.

This facility has MWC (municipal waste combustor) type emissions units that are subject to the emission standards and limitations under the May 10, 2006 federal amendments to the 40 CFR 60, Subpart Cb.

{Permitting notes: By this permit, these emission units are regulated under the State of Florida's Rule 62-296.401(4), F.A.C., for Biological Waste Incinerators. As conditioned by this permit, these emission units are not regulated as hospital/medical/infectious waste incinerators under 40 CFR 60, Subpart Ec or Ce.}

PREVIOUS APPLICABLE REQUIREMENTS

1. Effect on Other Permits: These conditions are in addition to all other applicable permit conditions and regulations for these emissions units. [Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

BEST MANAGEMENT PRACTICES (BMPs) – BIOMEDICAL WASTE VENDOR AUDITING PROCEDURES

2. Biomedical Waste Vendor Auditing Procedures: The permittee shall develop BMPs that codify the procedures outlined in Appendix E - Biomedical Waste Vendor Auditing Procedures. The BMPs for auditing procedures shall be submitted to the Permitting and Compliance Authorities 90 days prior to the first firing of biomedical waste in the MWC units. The BMPs shall also be kept on site and made available for inspection upon request.

   [Rules 62-4.070(1)&(3), *Reasonable Assurance* and 62-210.200, *Definitions - Potential to Emit (PTE)*, F.A.C.]

AUTHORIZATION TO CO-FIRE BIOMEDICAL WASTE WITH MSW IN MWC UNIT NOS. 1 & 2

3. Authorization to Co-fire Biomedical Waste with MSW in MWC Unit Nos. 1 & 2: The permittee is authorized to co-fire biomedical waste with MSW in MWC Unit Nos. 1 & 2 to less than 10% by weight of the total amount of waste combusted by each individual MWC unit; this is equivalent to a maximum mass of less than 28.8 tons per day (TPD) per MWC unit. Compliance with this limitation shall be determined on a calendar month basis. Demonstration of compliance with the 28.8 TPD per MWC unit shall be in accordance with Specific Condition **29.** Biomedical waste is not part of the non-MSW (municipal solid waste) materials that were authorized under Permit No. 0690046-003-AC/PSD-FL-113E. "**Biomedical waste**" under this permit is specifically described in Rule 62-210, F.A.C. and is defined as follows:

   62-210 Definitions.

   "**Biomedical waste**" means any solid or liquid waste which may present a threat of infection to humans, including nonliquid tissue, body parts, blood, blood products, and body fluids from humans and other primates; laboratory and veterinary wastes which contain human disease-causing agents; and discarded sharps. The following are also included:

(a) Used absorbent materials saturated with blood, blood products, body fluids, or excretions or secretions contaminated with visible blood; and absorbent materials saturated with blood or blood products that have dried.

(b) Non-absorbent, disposable devices that have been contaminated with blood, body fluids, or secretions or excretions visibly contaminated with blood, but have not been treated by a method listed in Section 381.0098, F.S., or a method approved pursuant to Chapter 64E-16, F.A.C.

Unacceptable biomedical waste shall not be unloaded onto the tipping floor or co-fired in the MWC Unit Nos. 1 & 2.

Unacceptable biomedical waste shall include:
(1) EPA hazardous pharmaceutical waste (nicotine, warfarin);
(2) Human fetal tissue;
(3) Human remains (fetuses, products of conception and cadavers);
(4) Large amounts of free-flowing liquids;
(5) Radioactive materials;
(6) Bulk pathological waste;
(7) Bulk chemotherapeutic waste; and,
(8) Formaldehyde, iodine or other preservative agents.

[Application No. 0690046-019-AC; Applicant Request; 40 CFR 60.50c(c) & 60.51c, *Definitions - Co-fired Combustor*; Rule 62-4.160(2), *Design;* Rule 62-210.200, *Definitions - Potential to Emit (PTE),* F.A.C.; and, Rule 62-4.070(1)&(3), *Reasonable Assurance,* F.A.C.]

4. Co-firing of Biomedical Waste with MSW Operation Practices: To ensure good mixing with MSW, operators shall use best management practices when co-firing biomedical waste with MSW as defined in a Co-firing of Biomedical Waste with MSW Training Plan. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

5. Co-firing of Biomedical Waste with MSW Operation Practices: The co-firing of biomedical waste with MSW shall not be done when starting up an MWC unit. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

PLANT PERSONNEL TRAINING

6. Co-firing of Biomedical Waste with MSW Training Plan: The permittee shall develop a training plan that defines the individual BMPs in the handling, storage and co-firing of biomedical waste in the MWC Unit Nos. 1 & 2. Plant personnel shall be trained in accordance with this plan prior to the handling, storing, and co-firing of biomedical waste with MSW in the MWC Unit Nos. 1 & 2. The training plan shall identify the practices that promote good mixing and combustion. The training plan, including the BMPs, shall be submitted to the Permitting and Compliance Authorities 90 days prior to the first firing of biomedical waste in the MWC units. The plan and BMPs shall also be kept on site and made available for inspection upon request. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

NEW EQUIPMENT

7. Biomedical Waste Feed System: Chapter 64E-16.004(2)(a), F.A.C. requires that packages of biomedical waste remain sealed until treatment. This permit authorizes the construction of a single drop automated hopper feed system to transfer biomedical waste from delivery trucks directly to the waste feed chutes of Units 1 and 2. This permit also authorizes a backup system to the conveyor system. Both biomedical waste feed systems as the permittee proposed and the Department authorizes are described in more detail below.
   a. Conveyor System: Boxes of biomedical waste shall be manually offloaded on the enclosed tipping floor onto the conveyor system. The conveyor system shall vertically lift the boxed waste to the charging

floor elevation, where it shall then be horizontally conveyed by an automated tipping bucket directly into the waste feed chute. Once in the feed chute, the boxes of biomedical waste shall be well mixed with municipal solid waste and fed by gravity onto the charging table that is integral to each MWC. From the charging table, the waste shall be hydraulically pushed into the combustion chamber.

b. Backup System: As a backup system to the conveyor system, the permittee shall utilize a similar automated tipping mechanism that shall be hoisted by the existing cranes. At times when the new biomedical waste conveyor system is down for maintenance, or otherwise unavailable, the standard orange peel grapple shall be disconnected from one of the two cranes and a similar automated tipping mechanism shall be used to transfer containerized biomedical waste from the tipping floor to the feed chute. As with the primary single drop automated hopper feed system, the backup crane operated hoist system shall allow packages of biomedical waste to remain sealed until treatment.

c. Installed System(s): A concept graphic of the "Single Drop Automated Hopper Feed" system was provided in the air permit application (see Figure 3-3, page 3-4). The permittee shall submit a final photo of the actual system(s) installed to the permitting authority and the compliance authority within 60 days of completion of construction.

Updates related to the biomedical waste feed system shall be approved by the Department before implementation. The practices described in this specific condition may be included as part of the BMPs to be developed and implemented by the facility.

[Application No. 0690046-019-AC; Applicant Request; Chapter 64E-16.004(2)(a), F.A.C.; and, Rule 62-4.160(2), *Design*, F.A.C.]

8. Other Physical Changes at the Plant: There shall be no other physical modifications (changes) at the plant to accomplish the co-firing of biomedical waste with MSW authorized by this permit. [Application No. 0690046-019-AC; Rule 62-210.200, *Definitions - PTE*, F.A.C.; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

BIOLOGICAL WASTE INCINERATOR RULE

9. Biological Waste Incinerator (BWI) Rule: When co-firing biomedical waste with MSW in the MWC units, the MWC units shall comply with the requirements of Rule 62-296.401(4), F.A.C., Biological Waste Incinerators. [Rule 62-296.401(4), F.A.C.; and, Application No. 0690046-019-AC.]

10. Operation - BWI Rule: The MWC units shall be constructed and operated so as to comply with all requirements of Rule 62-296.401(4)(b)-(f), F.A.C. [Rule 62-296.401(4)(a)2., F.A.C.; and, Application No. 0690046-019-AC.]

11. Design and Operating Requirements - BWI Rule: All biological waste incineration units, shall be constructed and operated so as to comply with the following design, operating, monitoring and operator training requirements:

a. The unit shall operate with a combustion zone design temperature of no less than 1,800 degrees Fahrenheit (°F) for at least a 1.0 second gas residence time in the secondary (or last) combustion chamber. The primary chamber and stack volumes shall not be utilized in calculating this residence time. [Rule 62-296.401(4)(c)1., F.A.C.]

The permittee provided a study that indicates a combustion zone temperature of 1,800 °F correlates to a temperature of 1,138 °F at the furnace roof. The same study cites a residence time of at least 1.5 seconds at this temperature.

1) The owner or operator shall install, calibrate, operate and maintain a continuous temperature monitor for the furnace roof. The monitor shall be calibrated according to the manufacture's written recommendations, no less than quarterly.

2) To maintain a combustion zone temperature equal to or greater than 1,800 °F, the furnace roof temperature must be above 1,138 °F.

[Applicant Request; and, Application No. 0690046-019-AC, Engineering Report & Appendix E of the Engineering Report.]

b. Mechanically fed units shall incorporate an air lock system to prevent opening the incinerator to the room environment. The volume of the loading system shall be designed to prevent overcharging, thereby assuring complete combustion of the waste. [Rule 62-296.401(4)(c)2., F.A.C.]

c. Incineration or ignition of waste shall not begin until the secondary (or last) combustion chamber temperature requirement is attained. All air pollution control and continuous emission monitoring equipment shall be operational and functioning properly prior to the incineration or ignition of waste and until all the wastes are incinerated. The secondary (or last) combustion chamber temperature requirement shall be maintained until the wastes are completely combusted. [Rule 62-296.401(4)(c)3., F.A.C.]

d. Each operator of the unit shall successfully complete a training program meeting the requirements of 40 C.F.R. 60.53c(c) and the annual refresher training course requirements of 40 C.F.R. 60.53c(f), adopted and incorporated by reference at Rule 62-204.800, F.A.C.

1) If the incinerator is modified to the extent that a Department construction permit is required, the operators shall be retrained to operate the modified incinerator.

2) An operator's training certificate must be kept on file at the facility for the duration of the operator's employment and for an additional two (2) years after termination of employment. The owner shall not allow the incinerator to be operated unless it is operated by an operator who has satisfactorily completed the required training program. [Rule 62-296.401(4)(c) 6., F.A.C.]

[Application No. 0690046-019-AC.]

12. Operator Training Course from 40 CFR 60.53c(c): Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:

(1) 24 hours of training on the following subjects:
(i) Environmental concerns, including pathogen destruction and types of emissions;
(ii) Basic combustion principles, including products of combustion;
(iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;
(iv) Combustion controls and monitoring;
(v) Operation of air pollution control equipment and factors affecting performance (if applicable);
(vi) Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable);
(vii) Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;
(viii) Actions to correct malfunctions or conditions that may lead to malfunction;
(ix) Bottom and fly ash characteristics and handling procedures;
(x) Applicable Federal, State, and local regulations;
(xi) Work safety procedures;
(xii) Pre-startup inspections; and,
(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Reference material distributed to the attendees covering the course topics.

[40 CFR 60.53c(c); and, Rule 62-204.800(8)(b), F.A.C.]

13. Annual Review or Refresher Course for Operators from 40 CFR 60.53c(f): To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least 4 hours covering, at a minimum, the following:

(1) Update of regulations;

(2) Incinerator operation, including startup and shutdown procedures;

(3) Inspection and maintenance;

(4) Responses to malfunctions or conditions that may lead to malfunction; and,

(5) Discussion of operating problems encountered by attendees.

[40 CFR 60.53c(f); and, Rule 62-204.800(8)(b), F.A.C.]

14. Electrical Interlock - Temperature/Biomedical Waste Feed System: An electrical interlock shall be established between the furnace roof temperature monitor and the biomedical waste feed system; and, any time that the furnace roof temperature falls below 1,138 °F, the biomedical waste feed system shall cease operation until the furnace roof temperature is restored to at least 1,138 °F. [Rule 62-4.160(2), *Design*, F.A.C.; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; and, Application No. 0690046-019-AC.]

15. Good Combustion Practices: All of the combustibles in the biomedical waste placed into the furnace must be completely combusted prior to removing from the furnace for further processing, such as ash handling and landfilling. [Rule 62-4.160(2), *Design*, F.A.C.; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; and, Application No. 0690046-019-AC.]

EMISSION LIMITATIONS & STANDARDS

16. Emission Standards & Limitations: The numerical part of the emission standards & limitations for E.U. ID Nos. 001 & 002, MWC Unit Nos. 1 & 2 were not changed under this project. While cofiring biomedical waste with MSW in an MWC unit, a 1-hour averaging time for CO emissions from the BWI Rule applies under this project. [Application No. 0690046-019-AC; Rule 62-210.200, *Definitions - PTE*, F.A.C.; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; and, Rule 62-296.401(4)(b)5., F.A.C.]

    Emission Limiting Standards- BWI Rule: When co-firing biomedical waste with MSW in the MWC units, the following emission standards/limits apply:

    a. Particulate matter (PM). PM emissions shall not exceed 0.020 grains per dry standard cubic foot of flue gas, corrected to 7% O_2.
    b. Hydrochloric acid (HCl). HCl emissions shall not exceed fifty (50) parts per million by volume, dry basis, corrected to seven percent (7%) O_2 on a three (3) hour average basis. As an alternative to this HCl limit, the HCl emission produced by the unit shall be reduced, by its air pollution control equipment, by at least ninety percent (90%) by weight on an hourly average basis.

    [Rule 62-296.401(4)(b)4., F.A.C.; and, Application No. 0690046-019-AC.]

    c. Carbon monoxide (CO). CO emissions shall not exceed 100 parts per million by volume, dry basis, corrected to 7% O_2 on an hourly average basis. [Rule 62-296.401(4)(b)5., F.A.C.; and, Application No. 0690046-019-AC.]

INITIAL COMPLIANCE DEMONSTRATION (TESTING)

17. Notification of Commencement of Co-firing of Biomedical Waste: The owner or operator shall notify the permitting and compliance authorities upon commencement of the co-firing of biomedical waste with MSW in the municipal solid waste combustor Unit Nos. 1 & 2. [Application No. 0690046-019-AC; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

18. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]

19. Initial Compliance Demonstration - Stack Test Data: The initial compliance demonstration while co-firing biomedical waste with MSW shall be performed for PM, the individual MWC metals (e.g., cadmium (Cd), lead (Pb) and mercury (Hg)), HCl and dioxin/furan emissions using stack test data. Stack tests while co-firing biomedical waste with MSW shall be performed on each individual MWC unit. A minimum of three stack test runs shall be conducted for each air pollutant (e.g., PM, Cd, Pb, Hg, HCl and dioxin/furan) while co-firing biomedical waste with MSW and all runs shall be averaged. The emissions data shall be reduced to the averaging time(s) as specified in the current valid Title V air operation permit, Permit No. 0690046-018-AV. The results shall be compared to the existing emission standards/limits. A summary of the stack tests and results while co-firing biomedical waste with MSW shall be submitted in a test report to the permitting and compliance authorities. In a summary of the test report, the permittee shall compare the results to when biomedical waste are not co-fired with MSW in the MWC units and to evaluate & report any changes in emissions.

    The test report shall include the rate (mass) at which biomedical waste were co-fired with MSW during testing.

    The carbon injection rate during Hg stack testing shall be included in the test report.

    {Permitting note: The permittee can also include statistical analyses of the compliance test results in the test report.}

    [Application No. 0690046-019-AC; Rule 62-297.310(7), *Special Compliance Tests*, F.A.C.; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

20. Initial Compliance Demonstration - COMS Data: The initial compliance demonstration while co-firing biomedical waste with MSW in each MWC unit shall be performed for VE using COMS data. COMS data shall be from the same time period as the PM stack test. While co-firing biomedical waste with MSW, a total of 3 hours of emissions data shall be used from the COMS. The emissions data shall be reduced to the averaging time(s) as specified in the current valid Title V air operation permit, Permit No. 0690046-018-AV. The results shall be compared to the existing emission standards/limits. A summary of the emissions data from the COMS while co-firing biomedical waste with MSW shall be submitted in a test report to the permitting and compliance authorities. In a summary of the test report, the permittee shall compare the results to when biomedical waste are not co-fired with MSW in MWC units and to evaluate & report any changes in emissions.

    The test report shall include the rate (mass) at which biomedical waste were co-fired with MSW during testing.

    [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

21. Initial Compliance Demonstration - CEMS Data: The initial compliance demonstration while co-firing biomedical waste with MSW in each MWC unit shall be performed for SO_2, NOx and CO using CEMS data. At least 24 hours of CEMS data shall be collected while co-firing biomedical waste with MSW to demonstrate compliance with the CO, SO_2 and NOx emissions standards. The periods of time in which the data is collected shall be the same periods of time for CO, NOx, and SO_2 emissions and each time period shall be no less than 4 continuous hours. The emissions data shall be reduced to the averaging time(s) as specified in the current valid Title V air operation permit, Permit No. 0690046-018-AV. The results shall be compared to the existing emission standards/limits. A summary of the emissions data from the SO_2, NOx and CO CEMS while co-firing biomedical waste with MSW shall be submitted in a test report to the permitting and compliance authorities. In a summary of the test report, the permittee shall compare the results to when biomedical waste is not co-fired with MSW in MWC units and to evaluate & report any changes in emissions.

    The test report shall include the rate (mass) at which biomedical waste were co-fired with MSW during testing.

The ammonia/urea injection rate during NOx testing shall be included in the test report.

[Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

22. Test Methods and Procedures: With the exception of the BWI rule, the test methods and procedures specified in the current valid Title V air operation permit, Permit No. 0690046-018-AV shall be used for the initial compliance demonstration while co-firing biomedical waste with MSW in the municipal solid waste combustor Unit Nos. 1 & 2. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

23. Test Methods and Procedures - BWI Rule: All emissions tests performed pursuant to the requirements of Rule 62-296.401(4), *Biological Waste Incinerator Rule*, F.A.C. shall comply with the following requirements. All EPA reference test methods are described in 40 C.F.R. Part 60, Appendices A-2 through A-8, adopted and incorporated by reference at Rule 62-204.800, F.A.C.
    a. The reference test method for VE shall be EPA Method 9.
    b. The reference test method for CO emissions shall be EPA Method 10.
    c. The reference test method for oxygen shall be EPA Method 3 or 3A.
    d. The reference test method for PM emissions shall be EPA Method 5 or 26A. The minimum sample volume shall be thirty (30) dry standard cubic feet.
    e. The reference test method for HCl emissions shall be EPA Method 26 or 26A.
    f. Test procedures shall conform to the procedures specified in Rule 62-297.310, F.A.C. All test results shall be reported to the Department in accordance with the provisions of Rule 62-297.310, F.A.C.

    [Rule 62-296.401(4)(d), F.A.C.; and, Application No. 0690046-019-AC.]

24. Monitoring and Testing Requirements: With the exception of the BWI rule, the existing applicable continuous monitoring requirements, test methods and procedures for MWC Units 1 & 2 are contained in the current valid Title V air operation permit, Permit No. 0690046-018-AV and are not changed by this permit. The applicant is authorized to use the mercury test frequencies and procedures already required for the MWC Units 1 & 2 pursuant to the Department's MWC Rule and 40 CFR 60, Subpart Cb and incorporated in the facility Title V air operation permit. [Application No. 0690046-019-AC.]

25. Frequency of Testing - BWI Rule: Pursuant to Rule 62-296.401(4), *Biological Waste Incinerator Rule*, F.A.C. the owner or operator shall:
    a. Have a performance test conducted for visible emissions (VE) prior to submitting the application for an initial air operation permit, and annually thereafter.
    b. Have performance tests conducted for PM and HCl prior to submitting the application for an initial air operation permit, and annually thereafter.

    [Rule 62-296.401(4)(e)2., F.A.C.; and, Application No. 0690046-019-AC.]

26. Continuous Emissions Monitoring Requirements - BWI Rule: Pursuant to Rule 62-296.401(4), *Biological Waste Incinerator Rule*, F.A.C. each owner or operator of a biological waste incinerator unit shall install, operate, and maintain, in accordance with the manufacturer's instructions, continuous emission monitoring equipment at the exit of the secondary (or last) combustion chamber. The monitors shall record the following operating parameters:
    a. Temperature; and,
    b. Oxygen.

    [Rule 62-296.401(4)(f)1., F.A.C.; and, Application No. 0690046-019-AC.]

REPORTING

27. Special Report on the Effects of the Co-firing of Biomedical Waste: The owner or operator shall submit a special report on the effects of the co-firing of biomedical waste with MSW on plant equipment, air pollution control devices & systems, the COMS and the CEMS. In the report, the owner or operator shall indicate whether or not there have been any observed effects on plant equipment, air pollution control devices & systems, the COMS and the CEMS from the handling, storage and the co-firing of biomedical waste with MSW in the MWC units. This special report shall be submitted to the permitting and compliance authorities within one year of performing the initial compliance demonstration. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

RECORDKEEPING

28. Biomedical Waste Recordkeeping: For each month when biomedical waste is co-fired with MSW, the owner or operator shall keep a record of the following on-site:
    a. the sources of the biomedical waste; and,
    b. the material characterization forms.

    [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

29. Records and Reporting of Quantities of Co-fired Biomedical Waste:
    a. Computation. Each day, the total weight of biomedical waste received that is subject to the 10% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of biomedical waste shall be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 10% limitation.
    b. Records. To demonstrate compliance with the less than 10% by weight restriction of co-firing biomedical waste with MSW, the permittee shall keep records on-site of the total quantity of co-fired biomedical waste and the weight of all other fuels & wastes combusted in each MWC unit.
    c. Reporting. The total annual quantity of co-fired biomedical waste in each MWC unit shall be reported in the AOR.

    [Application No. 0690046-019-AC; Applicant Request; 40 CFR 60.50c(c)(3); Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

30. Records Availability: All records shall be made available to the Department upon request. [Application No. 0690046-019-AC; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

31. Recordkeeping - BWI Rule: Pursuant to Rule 62-296.401(4), *Biological Waste Incinerator Rule*, F.A.C. the owner or operator shall maintain a complete file of all measurements, including continuous emissions monitoring system, monitoring device, and performance testing measurements; all continuous emissions monitoring system performance evaluations; all continuous emissions monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required, recorded in a permanent legible form available for inspection. The file shall be retained for at least two (2) years following the date of such measurements, maintenance, reports and records. [Rule 62-296.401(4)(f)2., F.A.C.; and, Application No. 0690046-019-AC.]

B. Waste (Fuel Slate) Revisions

This subsection of the permit addresses the following emissions units:

E.U. ID No.	Brief Description
001	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 1
002	288 TPD (maximum) Municipal Solid Waste Combustor & Auxiliary Burners - Unit 2

This subsection of the permit authorizes waste (fuel slate) revisions for municipal solid waste combustor Unit Nos. 1 & 2.

Permit Being Modified:	0690046-003-AC/PSD-FL-113E
Affected Emissions Units:	Municipal Waste Combustor Units 1 & 2 (E.U. ID Nos. 001 & 002)

The affected specific conditions from Permit No. 0690046-003-AC/PSD-FL-113E are hereby changed as follows (the remainder of the permit remains unchanged as a result of this permitting action):

Specific Condition 1.e.

Specific Condition 1.e. as reflected in Specific Conditions A.5. & A.45. in the current valid Title V air operation permit No. 0690046-018-AV are changed to:

{For simplified reading, the important revisions are emphasized with yellow highlight in this electronic document. ~~Strikethrough~~ is used to denote the deletion of text and double-underlines are used to denote the addition of text.}

A.5. Methods of Operation - Fuel.

a. *Allowable Fuels.*

(1) Municipal Solid Waste. Each municipal waste combustor shall be fueled with municipal solid waste (MSW), which includes wood chips (made from virgin or clean wood), waste tires, internally generated used oil, non-hazardous waste contaminated with virgin or used oil, and other solid waste/segregated loads, as defined below. The primary fuel for the facility is MSW, including the items and materials that fit within the definition of MSW contained in either 40 CFR 60.51b or Section 403.706(5), Florida Statutes (2010). Other fuels or wastes, not specifically listed herein, shall not be burned without written prior approval from the Department. Fuels or wastes specifically authorized herein do not require prior Department approval before combustion

(2) Auxiliary Burners. The auxiliary burners are permitted to fire only natural gas or propane. The auxiliary burners may be used at startup during the introduction of any approved MSW fuel until design furnace gas temperature is achieved; at shutdowns; and, at other times when necessary and consistent with good combustion practices. All air pollution control and continuous emissions monitoring equipment shall be operational and functioning properly prior to the incineration or ignition of any approved MSW fuel.

b. *Unauthorized Fuel.* Subject to the limitations contained in this permit, the authorized fuels for the facility also include the other solid wastes that are not MSW, which are described in categories (e), (f) and (g), below. However, the facility:

(1) shall not burn:

(a) those materials that are prohibited by state or federal law;
(b) those materials that are prohibited by this permit;
(c) hazardous waste;
(d) nuclear waste;
(e) radioactive waste;
(f) sewage sludge;
(g) used oil, except for what is generated on site (no used oil in liquid form from outside generators); or,
(h) explosives; and,

(2) Shall not knowingly burn:

~~(a) untreated biomedical waste from biomedical waste generators regulated pursuant to Chapter 64E-16, F.A.C., and from other similar generators (or sources). See the attached Appendix BW: Biomedical Waste Definitions, for definitions of what constitutes biomedical waste;~~

(b) segregated loads of biological waste (excluding biomedical waste);

(c) lead acid batteries; or,

(d) beryllium-containing waste, as defined in 40 CFR 61, Subpart C. *{Permitting note: The U.S. EPA letter dated April 6, 2000, on 40 CFR 61, Subpart C, further addresses the applicability of this federal regulation with regard to beryllium-containing wastes. See Appendix Be.}*

c. *Fuel Handling.* The fuel may be received either as a mixture or as a single-item stream (segregated load) of discarded materials. If the facility intends to use an authorized fuel that is segregated non-MSW material, the fuel shall be either:

(1) Well mixed with MSW in the refuse pit; or,

(2) Alternately charged with MSW in the hopper.

The facility operator shall prepare and maintain records concerning the description and quantities of all segregated loads of non-MSW material which are received and used as fuel at the facility, and subject to a percentage weight limitation, below [see **e.** and **f.**]. For the purposes of this permit, a segregated load is defined to mean a container or truck that is almost completely or exclusively filled with a single item or homogeneous composition of waste material, as determined by visual observation.

d. *Other Solid Waste.* Subject to the conditions and limitations contained in this permit, the following other solid waste may be used as fuel at the facility:

(1) Solid Waste From On-Site Operations - Used Oil.

(a) The constituents and properties of the on-spec used oil generated from on-site operations shall comply with the following allowable concentration levels, as stipulated and defined in 40 CFR 279.10 (July 1, 1998 version), which is adopted by reference in Rule 62-730.181, F.A.C.

Constituent/Property	Allowable Concentration
Cadmium	2 ppm maximum
Arsenic	5 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	4000 ppm maximum
Flash Point	100° F minimum
Polychlorinated Byphenyls (PCBs)	Less than 2 ppm

Note: Used oil containing more than 1,000 ppm halogens is presumed to be a hazardous waste under the rebuttable presumption provided under 40 CFR 279.10(b)(1). Such oil is subject to of 40 CFR 266, Subpart H rather than 40 CFR 279.10(b)(1) when burned for energy recovery unless the presumption of mixing can be successfully rebutted.

(b) On-site generated on-specification used oil, oily water, oily sludge, spent greases and oily solid waste (such as rags) burned at this facility shall not be a hazardous waste as defined by Rule 62-730.030, F.A.C., or 40 CFR 261 (July 1, 1999 version). These materials shall conform to the standards of 40 CFR 279.11 and 40 CFR 761.20(e). It shall not include fuels or blended fuels consisting in whole or in part of hazardous waste or which include mixture of any solid waste generated from the treatment, storage, or disposal of hazardous waste. The on-spec used oil shall be burned in compliance with Section 403.769(3), F.S. Records shall be maintained showing the tonnages of internally-generated used oil fired.

(c) The on-site generated on-specification used oil samples (representative of the material disposed of) shall be analyzed by EPA Recommended Analytical Procedures for Used Oil for the following constituent/property, associated unit, and using the test methods indicated:

Constituent/Property	Unit	Test Method
Cadmium	ppm	EPA SW-846(6010)
Arsenic	ppm	EPA SW-846(6010)
Chromium	ppm	EPA SW-846(6010)
Lead	ppm	EPA SW-846(6010)
Total Halogens	ppm	EPA SW-846(9252)
Sulfur	percent	ASTM D129 or ASTM D1552
Flash Point	degree F	EPA SW-846(1010)
Heat of Combustion	Btu/gal	ASTM D240
Density	lbs/gal	
Polychlorinated Byphenyls (PCB's)	ppm	EPA SW-846(0010) and EPA 680
Ash		

Note: Other test methods may be used only after receiving prior written approval from the Department.

(2) Solid Waste From Off-Site Operations.

(a) Confidential, proprietary or special documents (including but not limited to business records, lottery tickets, event tickets, coupons and microfilm);

(b) Contraband which is being destroyed at the request of appropriately authorized local, state or federal governmental agencies, provided that such material is not an explosive, a propellant, a hazardous waste, or otherwise prohibited at the facility. For the purposes of this section, contraband includes but is not limited to drugs, narcotics, fruits, vegetables, plants, counterfeit money, and counterfeit consumer goods;

(c) Wood pallets, clean wood, and land clearing debris;

(d) Packaging materials and containers;

(e) Clothing, natural and synthetic fibers, fabric remnants, and similar debris, including but not limited to aprons and gloves; or,

(f) Rugs, carpets, and floor coverings, but not asbestos-containing materials or polyethylene or polyurethane vinyl floor coverings.

e. *Waste Tires.* Subject to the conditions and limitations contained in this permit, waste tires may be used as fuel at the facility. The total quantity of waste tires received as segregated loads and burned at the facility shall not exceed 3%, by weight, of the facility's total fuel. Compliance with this limitation shall be determined as a daily average on a calendar monthly basis in accordance with Specific Condition **A.45.**

f. *Other Solid Waste/Segregated Loads.* Subject to the conditions and limitations contained in this permit, the following other solid waste materials may be used as fuel at the facility (i.e. the following are authorized fuels that are non-MSW material). The total quantity of the following non-MSW material received as segregated loads and burned at the facility shall not exceed 20%, by weight, of the facility's total fuel, unless otherwise stated. Compliance with this limitation shall be determined as a daily average on a calendar monthly basis in accordance with Specific Condition **A.45.**

(1) Construction and demolition debris.

(2) The maximum percentage of oil-contaminated solid waste (non-hazardous solid waste contaminated with virgin or used oil products) defined as oil spill clean-up debris and absorbing media, including oil filters, fired in each combustor is 20%, by weight, of the total solid waste input, determined as a daily average on a calendar monthly basis. All "used oil" shall comply with the definition stated in 40 CFR 260.10 and shall not exceed the specification levels for arsenic, cadmium, chromium, lead, and total halogens contained in Table 1 of 40 CFR 279.11, or contain any hazardous waste as

defined in 40 CFR 261.3. The used oil shall not have a polychlorinated biphenyl (PCB) content equal to or greater than 50 ppm, by weight.

(3) Items suitable for human, plant or domesticated animal use, consumption or application where the item's shelf-life has expired or the generator wishes to remove the items from the market. Such items or materials include but are not limited to off-specification or expired consumer products, pharmaceuticals, medications, health and personal care products, cosmetics, foodstuffs, nutritional supplements, returned goods, and controlled substances.

(4) Consumer-packaged products intended for human or domesticated animal use or application but not consumption. Such items or materials include but are not limited to carpet cleaners, household or bathroom cleaners, polishes, waxes and detergents.

(5) Waste materials that:

(a) are generated in the manufacture of items in categories (3) or (4), above and are functionally or commercially useless (expired, rejected or spent); or,

(b) are not yet formed or packaged for commercial distribution. Such items or materials must be substantially similar to other items or materials routinely found in MSW.

(6) Waste materials generated by manufacturing, industrial or agricultural activities, provided that these items or materials are substantially similar to items or materials that are found routinely in MSW, subject to prior approval of the Department.

g. *Non-hazardous Solid and Liquid Wastes/Segregated Loads.* Subject to the conditions and limitations contained in this permit, non-hazardous solid and liquid wastes may be used as fuel at the facility (i.e., authorized fuels that are non-MSW material). The total quantity of the non-MSW material received as segregated loads and burned at the facility shall not exceed 20%, by weight, of the facility's total fuel, unless otherwise stated. Compliance with this limitation shall be determined as a daily average on a calendar monthly basis in accordance with Specific Condition **A.45.** [Permit No. 0690046-014-AC/PSD-FL-113I; Section 403.707(1), F.S. (amendment in 2012).]

h. *Regulated Garbage from International or Interstate Movements.* The facility is authorized to process international or interstate regulated garbage, which means garbage that originates from outside the continental United States or Canada and is regulated by the Department of Homeland Security, Customs and Border Protection under the authority of the Animal and Plant Health Inspection Service. Processing of the regulated garbage shall be in accordance with the Compliance Agreement and Addendums signed on June 16, 2009, with the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine. Regulated garbage means garbage that was on board, generated on board or removed from any means of conveyance during international or interstate movements, and includes food scraps, table refuse, galley refuse, food wrappers or packaging materials and other waste material from stores, food preparation areas, passengers' or crews' quarters, dining rooms or any other areas on means of conveyance, and meals and foods that were available for consumption by passengers or crew on an aircraft but were not consumed. Garbage that is commingled with regulated garbage becomes regulated garbage. The term "interstate" includes Hawaii, Alaska and the U.S. territories. The term "movement" includes all potential transportation types, such as the airlines, cruise lines, trucks, etc. (See Appendix CA: Compliance Agreement with USDA, Compliance Agreement with Addendums signed June 16, 2009.)

i. *Leachate Injection.* The facility is authorized to inject landfill leachate into the lime spray dryer absorbers (scrubbers) that are part of the air pollution control equipment of Units 1 and 2. The leachate injection activities may operate continuously (8,760 hours/year).

After subparagraph "i." a new paragraph "j." is inserted (added) as follows:

j. *Biomedical Waste that is not Unacceptable Biomedical Waste.* Subject to the conditions and limitations contained in this permit, biomedical waste that is not unacceptable biomedical waste may be used as fuel at the facility (i.e., an authorized fuel that is a segregated non-MSW material). The total quantity of biomedical waste that is not unacceptable biomedical waste received as segregated loads and burned at the facility shall be less than 10% by weight of the total amount of waste combusted by each individual

MWC unit; this is equivalent to a maximum mass of less than 28.8 tons per day (TPD) per MWC unit. Compliance with this limitation shall be determined on a calendar month basis. Demonstration of compliance with the 28.8 TPD per MWC unit shall be in accordance with Specific Condition **A.45.e.**

62-210 Definitions.

"**Biomedical waste**" means any solid or liquid waste which may present a threat of infection to humans, including nonliquid tissue, body parts, blood, blood products, and body fluids from humans and other primates; laboratory and veterinary wastes which contain human disease-causing agents; and discarded sharps. The following are also included:

(a) Used absorbent materials saturated with blood, blood products, body fluids, or excretions or secretions contaminated with visible blood; and absorbent materials saturated with blood or blood products that have dried.

(b) Non-absorbent, disposable devices that have been contaminated with blood, body fluids, or secretions or excretions visibly contaminated with blood, but have not been treated by a method listed in Section 381.0098, F.S., or a method approved pursuant to Chapter 64E-16, F.A.C.

Unacceptable biomedical waste shall not be unloaded onto the tipping floor or co-fired in the MWC Unit Nos. 1 & 2.

Unacceptable biomedical waste shall include:

1. EPA hazardous pharmaceutical waste (nicotine, warfarin);
2. Human fetal tissue;
3. Human remains (fetuses, products of conception and cadavers);
4. Large amounts of free-flowing liquids;
5. Radioactive materials;
6. Bulk pathological waste;
7. Bulk chemotherapeutic waste; and,
8. Formaldehyde, iodine or other preservative agents.

[Rules 62-4.160(2), 62-210.200 and 62-213.440(1), F.A.C., AC35-115379/PSD-FL-113(C), 0690046-003-AC/PSD-FL-113(E), 0690046-008-AC/PSD-FL-113(H), Permit No. 0690046-012-AC; Permit No. 0690046-014-AC/PSD-FL-113(I); 0690046-019-AC/PSD-FL-113K; Rules 62-4.070(3) and 62-210.200(PTE); F.A.C.; Section 403.707(1), F.S. (amendment in 2012).]

Recordkeeping and Reporting Requirements

A.45. Other Solid Waste/Segregated Loads Recordkeeping. The following records shall be made and kept to demonstrate compliance with the other solid waste/segregated non-MSW percentage limitations of Specific Condition **A.5.**

a. *Segregated Loads of Non-MSW Materials.* Each segregated load of non-MSW materials that is subject to the percentage weight limitations of Specific Condition **A.5.**, which is received for processing shall be documented as to waste description and weight. The weight of all waste materials received for processing shall be measured using the facility truck scale and recorded.

b. *Segregated Tires.* Each day, the total weight of segregated tires received shall be computed, and the daily total shall be added to the sum of the daily totals from the current calendar month. At the end of each calendar month, the resultant monthly total weight of tires shall be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 3% limitation.

c. *Non-hazardous Solid and Liquid Waste/Segregated Loads.* Each day, the total weight of segregated non-MSW materials received that are subject to the 20% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of segregated non-MSW materials shall

be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 20% limitation.

Records shall be maintained showing the non-hazardous solid and liquid waste's written certification that the waste is non-hazardous. Documentation requirements shall include a written description of the waste and a material characterization form for the waste components. Tonnages of non-hazardous solid and liquid waste fired shall be recorded and made available to the Department upon request. These records shall be maintained for a period of five years.

d. *Other Solid Waste - Oil-contaminated Solid Waste.* Each day, the total weight of other solid waste received that are subject to the 20% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of other solid waste shall be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 20% limitation. Records shall be maintained showing the oil-contaminated waste generator's written certification that the waste is non-hazardous. Documentation requirements shall include a written description of the waste, a material characterization form, and the applicable material safety data sheets for the waste components. Tonnages of oil-contaminated solid waste fired shall be recorded and made available to the Department upon request. These records shall be maintained for a period of five (5) years.

After subparagraph "d." a new paragraph "e." is inserted (added) as follows:

e. *Biomedical Waste that is not Unacceptable Biomedical Waste.* Each day, the total weight of biomedical waste received that is subject to the 10% restriction shall be computed, and the daily total shall be added to the sum of the daily totals from the previous days in the current calendar month. At the end of each calendar month, the resultant monthly total weight of biomedical waste shall be divided by the total weight of all waste materials received in the same calendar month, and the resulting number shall be multiplied by 100 to express the ratio in percentage terms. The percentage computed shall be compared to the 10% limitation.

Records shall be maintained showing the biomedical waste's written certification that the waste is not an unacceptable biomedical waste. Documentation requirements shall include a written description of the waste and a material characterization form for the waste components. Tonnages of biomedical waste fired shall be recorded and made available to the Department upon request. These records shall be maintained for a period of five years.

[Rule 62-213.440(1), F.A.C.; Permit Nos. AC35-115379/PSD-FL-113(D), 0690046-003-AC/PSD-FL-113(E), and 0690046-014-AC/PSD-FL-113(I); 0690046-019-AC/PSD-FL-113K; Section 403.707(1), F.S. (amendment in 2012).]

Appendix D

Biomedical Waste
Generator Auditing Program

BIOMEDICAL WASTE (BMW) OPPORTUNITY MANAGEMENT PROCESS

Introduction

Covanta introduces a comprehensive medical waste management program. This program has the highest level of industry standards for operational safety, environmental compliance, reliability and service all with a sustainable outcome for material management.

Medical waste material is managed for disposal by energy from waste technology at Covanta's OSHA VPP facilities. Biomedical waste and medical waste that has been treated are destroyed using a highly automated feed system and produce renewable energy in the form of steam or electric power.

Covanta provides this medical waste disposal service primarily to frontline medical waste service providers with collection and transfer station assets.

Process for Managing BMW Opportunities and for On-Boarding BMW Customers

1. Conference call with Customer to review requirements of the Covanta's BMW program and gather information about the customer including:

    a) Acceptable materials
    b) Packaging requirements
    c) Acceptable container types
    d) Transportation requirements
    e) Company background and structure
    f) Financial information
    g) Operations and capabilities
    h) Current medical waste disposal outlets and types of material managed

2. Completion of a Material Characterization Form (MCF) and the supplemental requirements for a BMW approval with Customer providing examples of the following:

    a) Procedures/protocols provided to BMW generators for the proper segregation of components of the BMW stream at point of generation in a healthcare facility as per Federal/State Regulations.
    b) Source segregation procedures for pharmaceuticals and non-hazardous pharmaceuticals that are commingled with sharps.
    c) Educational material used at BMW generator sites that illustrates proper source segregation of BMW and proper use of BMW packaging.
    d) Customer in-service/refresher training programs on proper source segregation of waste.

3. Initial Customer Facility Visit:
   Upon Business Development acknowledgment of above customer responses, an accompanied site is scheduled with a Material Compliance representative to initially incur:
   a) Review business methods, perform a documented facility audit.
   b) Capture proper permitting, facility controls, Internal training and equipment verifications
   c) Review of inbound waste receiving, inspection, QA/QC process, staging and repacking, outbound shipments.
   d) Determination of required conversions to meet Covanta specifications (i.e.: waste segregation, container type/size, absorbent use, and transporter, client service agreements).
   e) In person review of acceptable/unacceptable materials, QA/QC process and CES BMW Service Agreement.

4. BMW Service Agreement:

   a) All BMW Customers must sign an BMW specific service agreement with Covanta. The Waste Acceptance Criteria for BMW are clearly defined within the Service Agreement. The customer must also provide evidence of insurance as part of this process.

5. Approval of MCF and Service Agreement:

   a) After any required conversions occur and any required follow up site visits are completed- the MCF, Supplemental Requirements, and BMW Service Agreement are submitted for final approval.

6. Loads Received:

   a) The Receiving Covanta facility performs 100% audits on BMW shipments. Each Customer shipment must be accompanied by a load certification document that declares the shipment does not contain human fetal tissue (See attached). BMW deliveries are not offloaded until all required generator signed shipment documents, including the Covanta Facility Medical Waste Certification, is received at the facility.

7. QA/QC Load Inspections:

   a) Each BMW load delivered to the receiving Covanta Facility is inspected by designated QA/QC personnel. Exceptions are recorded by QA/QC staff which then triggers customer notification and corrective action. Depending upon the severity of the exception it may trigger a load rejection, customer suspension and/or automatic customer site inspection.

8. Customer Medical Waste Facility Audit:

   a) For the first year under contract the Customer's facilities are audited by the designated Material Compliance QA/QC team at a minimum of once annually- and may also be subjected to additional site visits.
   b) The customer also agrees to allow Covanta to inspect their Customer's sites if requested.

c) For year 2 onward Material Compliance QA/QC audits occur at a frequency dependent on load inspection performance and at a minimum once per year.

Appendix E

City of Bristol Letters of Support

April 14, 2020 Letter

October 13, 2020 Letter

Letter of Support Dated April 14, 2020

ELLEN ZOPPO-SASSU
MAYOR

City of Bristol

RESPICE, ADSPICE, PROSPICE
Look to the Past, Look to the Present, Look to the Future

April 14, 2020

Mr. Robert Isner
Director, Waste Engineering & Enforcement
Connecticut Department of Energy & Environmental Protection
79 Elm St.
Hartford, CT 06106-5127

SUBJECT: Covanta Bristol Solid Waste Disposal Authorization

Dear Mr. Isner:

This letter is sent to encourage DEEP to favorably consider the application by Covanta to receive and process regulated medical waste (RMW) at the Covanta Bristol resource recovery facility. I note here that the City of Bristol has partnered with Covanta for thirty-five years in a successful relationship to responsibly manage waste.

It is our understanding that Covanta has demonstrated to DEEP the limited capacity available to handle these materials, as well as the distance to the facilities permitted in other states. Further, Covanta has experience handling special waste, including RMW. We believe it is vital to public health to have appropriate, local disposal of biomedical waste which could be provided by the Bristol facility, exclusive of human tissue or anatomical organs.

We recognize that Covanta has invested considerable resources into developing their proposal, including a public presentation at the City of Bristol Council Chambers. Thus far, we are not aware of any opposition to the proposal, and Covanta has demonstrated its presence as a community leader and good neighbor. With proper oversight and reporting, we see no reason to reject the RMW component of the company's Solid Waste Disposal Authorization.

Finally, we note the Commissioner's 20 by 20 goals No. 1 – permitting timeframes and No. 18 – opportunities for innovate partnerships, provide guidance for DEEP to expeditiously conduct its review.

Sincerely,

Ellen Zoppo-Sassu

Ellen Zoppo-Sassu
Mayor, City of Bristol

cc: James Belden
Mark Bobman

111 North Main Street Bristol, CT 06010 (P) 860-584-6250 (F) 860-584-3835
mayorsoffice@bristolct.gov

Letter of Support Dated October 14, 2020

ELLEN ZOPPO-SASSU
MAYOR

City of Bristol

RESPICE, ADSPICE, PROSPICE
Look to the Past, Look to the Present, Look to the Future

October 14, 2020

Mr. Robert Isner
Director, Waste Engineering & Enforcement
Connecticut Department of Energy & Environmental Protection
79 Elm St.
Hartford, CT 06106-5127

Dear Mr. Isner,

This letter is sent to recognize the tremendous work that Covanta Bristol, Inc. (Covanta) has done as a service provider for the City of Bristol. Covanta has consistently maintained itself as a good neighbor in the 35 years that the City and Covanta have managed the city's waste. It is our intent that this working relationship will continue in the years to come.

The City of Bristol and the 13 other communities which comprise the Bristol Resource Recovery Facility Operating Committee strongly support Covanta's plans to process biomedical waste at the Bristol Resource Recovery Facility (RRF). Throughout all project development and permitting processes, Covanta continues to keep my office and my Public Works Solid Waste team informed and equipped with the critical information that we need to perform our responsibilities and respond to community concerns. Through its Public Participation Plan, which was developed and implemented in 2018-2019, Covanta allowed our community to meaningfully participate in the discussions related to any and all operational changes, and to address any topics surrounding environmental and health related concerns.

The City of Bristol and Covanta have a long-standing agreement which has afforded us financial resources to use to benefit the environment. For example, this host community benefit agreement has allowed the city to:

- Use funds to create our award-winning Outdoor Classroom and Garden programs at our local schools which was recently featured on CPTV;
- Invest in the health and wellbeing of our city through sponsored drug takeback programs in conjunction with the Police Department;
- Launched a diversion program called "Trash to Treasure" to keep large items out of the waste stream. Items in good condition are put aside at the Transfer Station instead of sent for incineration. The items are then brought to the Saturday Farmers Market and given away free to residents.

In November 2018, the agreement was amended to address Covanta's proposed processing of regulated biomedical waste at the Bristol RRF.

111 North Main Street Bristol, CT 06010 (P) 860-584-6250 (F) 860-584-3835
mayorsoffice@bristolct.gov

In addition to our scope of work at the city level, Covanta has consistently gone above and beyond their expected level of service by participating and supporting the community through:

- Sponsor lower income and minority families through their partnership and continued support of the Bristol Boys and Girls Club
- Support members of our community that were impacted by the pandemic through Covanta's recent donation to the city for COVID relief
- Creating and funding scholarships to promote STEM programs in our schools

As the chief elected official of the City of Bristol, I wish to reiterate our City's support for Covanta and their proposed plan to process regulated biomedical waste at the Bristol RRF as communicated previously to you in my April 14, 2020 letter (Attached). Opposition from the community to Covanta's proposal has not been communicated to us in the 6 months since I sent you that letter. As our local government continues to monitor potential community concerns, we encourage DEEP to favorably consider Covanta's pending permit application and expeditiously conduct its review.

Sincerely,

Ellen Zoppo-Sassu

Mayor Zoppo-Sassu

cc: Ben Gassaway
Mark VanWeelden
Mark Bobman

111 North Main Street Bristol, CT 06010 (P) 860-584-6250 (F) 860-584-3835
mayorsoffice@bristolct.gov

ATTACHMENT B

APPLICANT COMPLIANCE INFORMATION

Connecticut Department of
Energy & Environmental Protection

Applicant Compliance Information

DEEP ONLY
App. No. _____
Co./Ind. No. _____

Applicant Name: Covanta Bristol, Inc

Mailing Address: **170 Enterprise drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Business Phone: **860-589-6470** ext.:

Contact Person: **George Drew** Phone: **978-697-6547** ext.

*E-mail: **gdrew@covanta.com**

If you answer *yes* to any of the questions below, you must complete the Table of Enforcement Actions on the reverse side of this sheet as directed in the instructions for your permit application.

A. During the five years immediately preceding submission of this application, has the applicant been convicted in any jurisdiction of a criminal violation of any environmental law?

☐ Yes ☒ No

B. During the five years immediately preceding submission of this application, has a civil penalty been imposed upon the applicant in any state, including Connecticut, or federal judicial proceeding for any violation of an environmental law?

☐ Yes ☒ No

C. During the five years immediately preceding submission of this application, has a civil penalty exceeding five thousand dollars been imposed on the applicant in any state, including Connecticut, or federal administrative proceeding for any violation of an environmental law?

☐ Yes ☒ No

D. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal court issued any order or entered any judgement to the applicant concerning a violation of any environmental law?

☒ Yes ☐ No

E. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal administrative agency issued any order to the applicant concerning a violation of any environmental law?

☒ Yes ☐ No

Table of Enforcement Actions

(1) Type of Action	(2a) Date Commenced	(2b) Date Terminated	(3) Jurisdiction	(4) Case/Docket/ Order No.	(5) Description of Violation
Notice of Violation	**3/18/2019**	**5/8/2019**	**CTDEEP**	**17955**	**Deviations of the Title V permit during 2017 and 2018 based upon information provided by Covanta in the Title V Monitoring Reports**

☐ Check the box if additional sheets are attached. Copies of this form may be duplicated for additional space.

ATTACHMENT E

CT NDDB INFORMATION

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

November 8, 2019

Carla Sylvester
Blue River Engineering LLC
P.O. Box 291
Eat Hampton CT 06424
carla@br-engineering.com

Project: Permit modification to accept and incinerate an additional waste stream and constructing of a building addition at Covanta Bristol Inc, 170 Enterprise Drive in Bristol, CT
NDDB Determination No.: 201912258 - REVISED

Dear Ms. Sylvester,

I have reviewed Natural Diversity Database (NDDB) maps and files regarding the area of work provided for the proposed addition of a new waste stream and construction of a building addition at 170 Enterprise Drive in Bristol, Connecticut. There are known extant records for State Special Concern Eastern box turtles (*Terrapene carolina carolina*) that occur in the vicinity of the project boundaries. While the project site is not suitable, the surrounding area contains suitable habitat for box turtles.

Eastern Box Turtle (*Terrapene c. carolina*): Eastern box turtles inhabit old fields and deciduous forests, which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern box turtles have been negatively impacted by the loss of suitable habitat. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated. Reducing the frequency that motorized vehicles enter box turtle habitat would be beneficial in minimizing direct mortality of adults.

If work will occur when these turtles are active (April 1st to October 30th), then I recommend the following protection strategies in order to protect the turtles that could enter the construction area:

- Exclusionary practices are recommended to prevent any turtle access into construction areas. These measures will need to be installed at the limits of disturbance.
- Exclusionary fencing must be at least 20 in tall and must be secured to and remain in contact with the ground and be regularly maintained (at least bi-weekly and after major weather events) to secure any gaps or openings at ground level that may let animal pass through. Do not use plastic or netted silt-fence.
- All staging and storage areas, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed to remove individuals and exclude them from re-entry.
- All construction personnel working within the turtle habitat must be apprised of the species description and the possible presence of a listed species, and instructed to relocate turtles found inside work areas or notify the appropriate authorities to relocate individuals.
- Any turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and fencing should be inspected to identify and remove access point.
- In areas where silt fence is used for exclusion, it shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.

- All construction and staging equipment should remain on existing impervious surface. No heavy machinery or vehicles may be parked in any turtle habitat.
- Special precautions must be taken to avoid degradation of wetland habitats including any wet meadows and seasonal pools.
- Search the work area each morning prior to any work being done.
- Avoid and limit any equipment use within 50 feet of streams and brooks.
- Any confirmed sightings of box turtles or other state listed species should be reported and documented with the NDDB (deep.nddbrequest@ct.gov) on the appropriate special animal form found at (http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323460&depNav_GID=1641)

If these practices are followed then I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by November 8, 2021.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey, cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substitutes for on-site surveys necessary for a thorough environmental impact assessment. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the database as it becomes available.

Please contact me if you have further questions at (860) 424-3378, or karen.zyko@ct.gov . Thank you for consulting the Natural Diversity Database.

Sincerely,

Karen Zyko
Environmental Analyst

WILDLIFE IN CONNECTICUT

STATE SPECIES OF SPECIAL CONCERN

Eastern Box Turtle

Terrapene carolina carolina

Description

The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

Range

Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

Habitat and Diet

In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs, snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

Life History

From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up

to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

Conservation Concerns

The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles **cannot** be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a **box turtle collected before 1998**. This regulation limits possession to a single turtle collected before 1998. These regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

How You Can Help

- *Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.*
- *Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.*
- *Do not disturb turtles nesting in yards or gardens.*
- *As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.*
- *Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.*

State of Connecticut
Department of Environmental Protection
Bureau of Natural Resources
Wildlife Division
www.ct.gov/dep

The production of this Endangered and Threatened Species Fact Sheet is made possible by donations to the Connecticut Endangered Species/Wildlife Income Tax Checkoff Fund.

5/2008

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

October 21, 2019

Carla Sylvester
Blue River Engineering LLC
P.O. Box 291
East Hampton CT 06424
carla@br-engineering.com

Project: Permit modification to accept and incinerate an additional waste stream within the existing buildings at Covanta Bristol inc, 170 Enterprise Drive, Bristol, CT
NDDB Determination No.: 201912258

Dear Ms. Sylvester,

I have reviewed Natural Diversity Database (NDDB) maps and files regarding the area of work provided for the proposed addition of a new waste stream within the existing facility at 170 Enterprise Drive in Bristol, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by October 21, 2021.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey, cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substitutes for on-site surveys necessary for a thorough environmental impact assessment. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the database as it becomes available.

Please contact me if you have further questions at (860) 424-3378, or karen.zyko@ct.gov . Thank you for consulting the Natural Diversity Database.

Sincerely,

Karen Zyko
Environmental Analyst

Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

CPPU USE ONLY

App #:_____

Doc #:_____

Check #: No fee required

Program: **Natural Diversity Database**
Endangered Species

Hardcopy _____ **Electronic** _____

Request for Natural Diversity Data Base (NDDB) State Listed Species Review

Please complete this form in accordance with the instructions (DEEP-INST-007) to ensure proper handling of your request.
There are no fees associated with NDDB Reviews.

Part I: Preliminary Screening & Request Type

Before submitting this request, you must review the most current Natural Diversity Data Base "State and Federal Listed Species and Significant Natural Communities Maps" found on the DEEP website. These maps are updated twice a year, usually in June and December.

Does your site, including all affected areas, fall in an NDDB Area according to the map instructions:

☒ Yes ☐ No **Enter the date** of the map reviewed for pre-screening: **June 2019**

This form is being submitted for a :

☒ *New* NDDB request ☐ *Renewal/Extension* of a NDDB Request, ***without*** *modifications and within* ***two years*** *of issued NDDB determination* (no attachments required) [*CPPU Use Only - NDDB-Listed Species Determination* # 1736]	☐ *New* **Safe Harbor Determination** (optional) must be associated with an application for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ☐ *Renewal/Extension* of an existing Safe Harbor Determination ☐ With modifications ☐ Without modifications (no attachments required) [*CPPU Use Only - NDDB-Safe Harbor Determination* # 1736]
Enter NDDB Determination Number for Renewal/Extension:	Enter Safe Harbor Determination Number for Renewal/Extension:

Part II: Requester Information

If the requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, the name shall be stated **exactly as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of the State's database CONCORD.* (www.concord-sots.ct.gov/CONCORD/index.jsp)

If the requester is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change company/Individual Information to the address indicated on the form.

1. Requester*

Company Name: **Covanta Bristol, Inc.**

Contact Name: **George Drew**

Address: **170 Enterprise Drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Business Phone: **978-241-3025** ext.

**E-mail:

**By providing this email address you are agreeing to receive official correspondence from the department, at this electronic address, concerning this request. Please remember to check your security settings to be sure you can receive emails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes

a) Requester can best be described as:

☐ Individual ☐ Federal Agency ☐ State agency ☐ Municipality ☐ Tribal

☒ *business entity (* if a business entity complete i through iii):

i) Check type ☒ corporation ☐ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other:

ii) Provide Secretary of the State Business ID #: This information can be accessed at the Secretary of the State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Acting as (Affiliation), pick one:

☐ Property owner ☐ Consultant ☐ Engineer ☒ Facility owner ☐ Applicant

☐ Biologist ☐ Pesticide Applicator ☐ Other representative:

2. List Primary Contact to receive Natural Diversity Data Base correspondence and inquiries, if different from requester.

Company Name: **Blue River Engineering, LLC**

Contact Person: **Carla Sylvester** Title: **Principal**

Mailing Address: **PO Box 291**

City/Town: **East Hampton** State: **CT** Zip Code: **06424**

Business Phone: **860-467-4469** ext.

E-mail: **carla@br-engineering.com

Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

1. SITE NAME AND LOCATION

Site Name or Project Name: **Covanta Bristol, Inc.**

Town(s): **Bristol**

Street Address or Location Description:
170 Enterprise Drive, Bristol, CT

Size in acres, or site dimensions: **18 acres**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **954714.19232** Longitude: **797416.23975**

Method of coordinate determination (check one):

☐ GPS ☒ Photo interpolation using CTECO map viewer ☐ Other (specify):

2a. Describe the current land use and land cover of the site.

Existing Municipal Solid Waste Resource Recovery Facility

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

☒ Industrial/Commercial 60	☐ Residential _____	☒ Forest 35
☐ Wetland _____	☐ Field/grassland _____	☐ Agricultural _____
☒ Water 5	☐ Utility Right-of-way _____	
☐ Transportation Right-of-way _____	☐ Other (specify): _____	

Part IV: Project Information

1. PROJECT TYPE:

Choose Project Type: Transfer Station/Landfill/Recycle Ctr constr./mod., If other describe: _____

2. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint? ☒ Yes ☐ No If yes, explain.

Within the existing footprint of developed areas (building and asphalt pavement areas).

Part IV: Project Information (continued)

3. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used. Include a description of steps that will be taken to minimize impacts to any known listed species.

   Proposed permit modification to accept and incinerate an additional waste stream. Proposed equipment additions would be related to material handling, such as conveyors and loaders located inside the building. Process similar to existing process and there is no anticipated impact.

4. If this is a renewal or extension of an existing Safe Harbor request *with* modifications, explain what about the project has changed.

   Not applicable

5. Provide a contact for questions about the project details if different from Part II primary contact.

   Name:

   Phone:

   E-mail:

Part V: Request Requirements and Associated Application Types

Check *one* box from either Group 1, Group 2 *or* Group 3, indicating the appropriate category for this request.

Group 1. If you check one of these boxes, complete Parts I – VII of this form and submit the required attachments A and B.

- ☐ Preliminary screening was negative but an NDDB review is still requested
- ☐ Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- ☒ Request regards a preliminary site assessment or project feasibility study
- ☐ Request relates to land acquisition or protection
- ☐ Request is associated with a *renewal* of an existing permit or authorization, with no modifications

Group 2. If you check one of these boxes, complete Parts I – VII of this form and submit required attachments A, B, *and* C.

- ☐ Request is associated with a *new* state or federal permit or authorization application or registration
- ☐ Request is associated with modification of an existing permit or other authorization
- ☐ Request is associated with a permit enforcement action
- ☐ Request regards site management or planning, requiring detailed species recommendations
- ☐ Request regards a state funded project, state agency activity, or CEPA request

☐ **Group 3.** If you are requesting a **Safe Harbor Determination**, complete Parts I-VII and submit required attachments A, B, and D. Safe Harbor determinations can only be requested if you are applying for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

If you are filing this request as part of a state or federal permit application(s) enter the application information below.

Permitting Agency and Application Name(s):
CT DEEP

Related State DEEP Permit Number(s), if applicable: **01701072-PO, 01701245-SWDA, 026-0055-TV**

State DEEP Enforcement Action Number, if applicable: _____

State DEEP Permit Analyst(s)/Engineer(s), if known: _____

Is this request related to a previously submitted NDDB request? ☐ Yes ☒ No

If yes, provide the previous NDDB Determination Number(s), if known: _____

Part VI: Supporting Documents

Check each attachment submitted as verification that *all* applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all new requests and Safe Harbor renewals/extensions with modifications.** Renewals/Extensions with no modifications do not need to submit any attachments. Attachments C and D are supplied at the end of this form.

☒ Attachment A:	**Overview Map:** an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
☒ Attachment B:	**Detailed Site Map:** fine scaled map showing site boundary and area of work details on aerial imagery with relevant landmarks labeled. (Site and work boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
☐ Attachment C:	**Supplemental Information, Group 2 requirement (attached, DEEP-APP-007C)** ☐ Section i: Supplemental Site Information and supporting documents ☐ Section ii: Supplemental Project Information and supporting documents
☐ Attachment D:	**Safe Harbor Report Requirements, Group 3 (attached, DEEP-APP-007D)**

Part VII: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief."

George Drew	**10/7/2019**
Signature of Requester (a typed name will substitute for a handwritten signature)	Date
George Drew	
Name of Requester (print or type)	Title (if applicable)
Carla Sylvester	**10/7/2019**
Signature of Preparer (if different than above)	Date
Carla Sylvester	**Principal**
Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Or email request to: **deep.nddbrequest@ct.gov**

Attachment C: Supplemental Information, Group 2 requirement

Section i: Supplemental Site Information

1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

☐ **Site Photographs (optional) attached**

☐ **Site Plan/sketch of existing conditions attached**

2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species ☐ Yes ☐ No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name: _____

Habitat and/or species targeted by survey: _____

Dates when surveys were conducted: _____

☐ **Reports of biological surveys attached**

☐ **Documentation of biologist's qualifications attached**

☐ **NDDB Survey forms for any listed species observations attached**

Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

☐ **Annotated Site Plan attached**

Attachment D: Safe Harbor Report Requirements

Submit a report, as Attachment D, that synthesizes and analyzes the information listed below. Those providing synthesis and analysis need appropriate qualifications and experience. A request for a safe harbor determination shall include:

1. **Habitat Description and Map(s), including GIS mapping overlays, of a scale appropriate for the site, identifying:**

    - wetlands, including wetland cover types;
    - plant community types;
    - topography;
    - soils;
    - bedrock geology;
    - floodplains, if any;
    - land use history; and
    - water quality classifications/criteria.

2. **Photographs** - The report should include photographs of the site taken from the ground and also all reasonably available aerial or satellite photographs and an analysis of such photographs.

3. **Inspection** - A visual inspection(s) of the site should be conducted, preferably when the ground is visible, and described in the report. This inspection can be helpful in confirming or further evaluating the items noted above.

4. **Biological Surveys** - The report should include all biological surveys of the site where construction activity will take place that are reasonably available to a registrant. A registrant shall notify the Department's Wildlife Division of biological studies of the site where construction activity will take place that a registrant is aware of but are not reasonably available to the registrant.

5. **Based on items #1 through 4 above, the report shall include a Natural Resources Inventory of the site of the construction activity.** This inventory should also include a review of reasonably available scientific literature and any recommendations for minimizing adverse impacts from the proposed construction activity on listed species or their associated habitat.

6. **In addition, to the extent the following is available at the time a safe harbor determination is requested, a request for a safe harbor determination shall include and assess:**

    - Information on Site Disturbance Estimates/Site Alteration information
    - Vehicular Use
    - Construction Activity Phasing Schedules, if any; and
    - Alteration of Drainage Patterns

CT Environmental Conditions Online

170 Enterprise Drive Bristol

Legend

- Natural Diversity Database Are
- Light Gray Canvas Base

Notes

0.3 0 0.14 0.3 Miles

ATTACHMENT G

ENVIRONMENTAL JUSTICE PUBLIC PARTICIPATION PLAN APPROVAL LETTER

Covanta Bristol, Inc
170 Enterprise Drive
Bristol, CT 06010
Tel: 860-589-6470

April 29, 2019

Environmental Justice Program
CT Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127
Attn: Ms. Edith Pestana, MPH
Administrator

RE: Covanta Bristol, Inc
Bristol Resource Recovery Facility
Environmental Justice Public Participation Plan
Final Report

Dear Ms. Pestana:

Covanta Bristol, Inc (Covanta) is pleased to submit this revised final report on the Environmental Justice Public Participation Plan that was recently implemented in accordance with this approved plan.

If there are any questions or comments, please do not hesitate to contact me at (978) 241-3025.

Sincerely,
George Drew
George Drew
Regional Environmental Manager
Northeast Region

CC: J. Vitale
L. Smith
T. King
G. Pierce

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

September 14, 2018

Mr. Joseph Vitale
Covanta Bristol, Inc.
Bristol Resource Recovery Facility
170 Enterprise Drive
Bristol, CT 06010

Re: **Approval of the Covanta Bristol Resource Recovery Facility Environmental Justice Public Participation Plan**

Dear: Mr. Vitale:

The Environmental Justice Public Participation Plan (Plan) for the **Bristol Resource Recovery Facility** was received on August 27, 2018. The Plan indicates that this is a request for an expansion of an existing. A review of the information submitted in Parts I, II, III and IV of the Plan satisfy the requirements under Sec. 22a-20a (4)(b)(1) 22a -20a (4(b)(2) and 22a-20a(4)(b) (3) of the Connecticut General Statutes and the Connecticut Department of Energy and Environmental Protection's Environmental Equity Policy. The date, time and meeting location were discussed with the Environmental Justice Program staff prior to submittal of the Plan. The Public Information meeting will take place on October 17, 2018 at 6:00 pm at the Bristol Fire Department Engine 4 Firehouse. The Plan indicates that public notice announcing the informational meeting will be published in the Bristol Press on Monday October 1, 2018.

The Plan for the Covanta Bristol Resource Recovery facility is approved. Should any of the information provided in the Plan change, please contact the Environmental Justice Program to determine if an amendment to the approved Plan is required. **In addition, a Final Report documenting the implementation of the Plan must also be submitted prior to the issuance of the Notice of Tentative Determination by the Department**. A summary of the public's environmental and public health concerns and how you plan to address them should be documented and included in the Final Report.

Sincerely,

Edith Pestana, MPH

Cc. Jaclyn M. Caceci

Covanta Bristol, Inc
170 Enterprise Drive
Bristol, CT 06010

Covanta Bristol, Inc.
Bristol, CT

Project to allow certain medical wastes to be added to the special waste approval program

Environmental Justice Public Participation Plan

Final Report

Covanta Bristol, Inc.
Bristol, CT

Project to allow certain medical wastes to be added to the special waste approval program

Environmental Justice Public Participation Plan

Final Report

Date: April 29, 2019

Prepared by: George Drew

Reviewed by: Joseph Vitale

Table of Contents

1.0 Executive Summary

Section 22a-20a of the Connecticut General Statutes (CGS) and Connecticut Department of Energy and Environmental Protection's (CTDEEP) Environmental Justice Participation Guidelines (http://www.ct.gov/deep/lib/deep/environmental_justice/EJ_Guid.pdf) require applicants seeking a permit from the CTDEEP for a new or expanded facility defined as an "affecting facility" and is proposed to be located or expanded in an environmental justice (EJ) community to:

- file an Environmental Justice Public Participation Plan (the "Plan");
- consult with the chief elected official or officials of the town or towns in which the affected facility is located to evaluate the need for a community environmental benefit agreement; and
- notify, in writing, local residents and environmental groups potentially affected by the facility activities and operations.

The Plan, which describes the applicant's public outreach efforts in support of the new or expanded facility, must receive approval from the CT DEEP's EJ Program prior to submittal of an application for a CT DEEP permit. In addition, the Plan provides an opportunity for the affected community to participate and influence the CTDEEP's regulatory process.

Covanta Bristol, Inc. (Covanta) is proposing to seek permit modifications to allow certain medical wastes to be added to its special waste approval program similar to the drug takeback program to ensure safe and reliable destruction. As part of this project, a new delivery system will be constructed to convey the boxed waste from the delivery trucks into the combustor for destruction.

Covanta submitted its Environmental Justice Public Participation Plan to CT DEEP on August 23, 2018 in support of the proposed project (refer to Appendix A). The plan was prepared by Tighe and Bond and outlined efforts Covanta would take regarding community outreach in Bristol for the proposed project.

The CTDEEP approved Covanta's Plan on September 14, 2018. Following outreach meetings with the city of Bristol and its departments, the decision was made to revise the plan location and date. These revisions were submitted to CT DEEP and subsequently approved in January 2019. Outreach efforts were then conducted in accordance with the plan. A public information meeting on the project was held on February 19, 2019 at the Bristol City Hall, council chambers.

Following the implementation of its CT DEEP approved Plan, Covanta is required to submit an EJ PP Plan Final Report. In accordance with CTDEEP's Environmental Justice Guidelines, this Final Report includes the following:

- Executive Summary, Title page "Environmental Justice Plan Final Report", table of contents, and an overview of activities;
- All supporting documents, reports, studies, public announcements, certified copy(s) of the newspaper postings, fliers, brochures, radio broadcasts, etc.
- Public meeting documentation including agenda, minutes, handouts, presentation outline, attendance signage sheets, list of all contact with local officials and individuals/groups identified in EJ PP Plan;
- Description of the results and recommendations of the Public Outreach efforts;
- Certification statement.

2.0 EJ Public Participation Plan Development and Approval

On August 23, 2018, Tighe and Bond, on half of Covanta, submitted the Environmental Justice Public Participation Plan for the Covanta Bristol project to the CT DEEP for review and approval. The plan outlined efforts that Covanta would take regarding community outreach in Bristol for the proposed project. Included in the Plan were:

- a description of the proposed project;
- a demonstration that the proposed project would not have a measurable environmental impact on the community;
- the identification of the potentially impacted community and individuals or groups to notify as part of the public outreach;
- the schedule and location for the planned Public Participation Meeting for the project;
- a list of communication methods to be used to publicize this meeting and the project; and
- the measures to ensure meaningful public participation for the project.

On September 14, 2018, Covanta received approval for the EJ PP plan from the CT DEEP.

On October 10, 2018, Covanta informed CT DEEP that EJ PP plan meeting was going to be rescheduled from the tentative date listed in plan until similar outreach meetings were first held with the Covanta facility employees and various city officials.

On January 10, 2019, Covanta provided the Department with a revised EJ PP plan for Covanta Bristol. The only changes were the meeting venue and date. The venue was changed from Bristol fire house to Bristol city council chambers, which would have adequate room, handicap accessibility and ample parking. The date was scheduled for February 19, 2019. This revision was subsequently approved by the CT DEEP.

See Appendix C for a copy of the Environmental Justice Public Participation Plan for the project.

3.0 Public Participation Meeting Outreach

Outreach meetings on the Project were held with Bristol Mayor Ellen Zoppo-Sassu and her staff. Subsequently, Mayor Zoppo-Sassu held meetings regarding the project with all her departments. In December 2018, the Bristol city council approved a community agreement between the city and Covanta for the project.

On January 22, 2019, the city posted an announcement of the Covanta project and the public participation meeting on their website. (See Appendix C). On January 28, 2019, a notice was posted on the Bristol city hall bulletin board also announcing the Covanta EJ PP meeting.

On February 4, 2019, a ¼ page advertisement of the Covanta EJ PP meeting was published in Monday edition of the Bristol Press newspaper. As was determined in the approved EJ PP Plan, there weren't any other common languages spoken by at least twenty percent of the population identified in this community.

On February 8, 2019, a sign was installed at Covanta facility entrance announcing the EJ PP meeting.

From February 6-8, 2019, written notices advertising the meeting were delivered by UPS to the local and state officials, property abutters, and sensitive receptors identified in the EJ PP Plan.

See Appendix A for documentation of these outreach activities.

4.0 Public Participation Meeting

In accordance with the approved plan, the EJ Public Participation Meeting for the Covanta Bristol project was held February 19, 2019 at 6:00 p.m. at Bristol city hall council chambers.

Covanta had developed poster boards for the meeting to inform and educate about the project. Boards included information on:

- The Covanta company and its Bristol facility
- Facility layout and operations
- Facility Health and Safety performance
- Facility Environmental performance
- Facility Community Outreach and Support projects
- Information on the project including types of acceptable and unacceptable materials; how materials will be received and processed; how emissions and truck traffic will not be impacted; and how the community and businesses would benefit.

Covanta provided various staff to provide information for each board. Larry Smith, Covanta Bristol Facility Manager, spoke about the Covanta company and its Bristol facility including its layout, its operations and its health and safety performance. Tonya King, Covanta Bristol Environmental Specialist, spoke about the facility's environmental performance. Joseph Vitale, Covanta Bristol Business Manager spoke out the Facility community outreach and support projects as well as the city of Bristol community benefits agreement. Finally, Les Griffith, Covanta Environmental Services, spoke about similar medical waste projects at other Covanta facilities as well as the project proposed at the Bristol facility.

Approximately 11 people attended the meeting including the members of the public, company representatives, and city officials. Not all attendees elected to sign the signature sheet

See Appendix B for documentation regarding the meeting.

5.0 Conclusion

The public outreach efforts described in this report did not identify any issue requiring further evaluation or mitigation. Most of the public meeting questions focused on how the new system would work.

The fact that there were only four attendees not affiliated with Covanta is indicative of the nature of the project (i.e., the proposed change in waste materials will be accomplished without increasing emissions or traffic) and Covanta's excellent relationship with the community. In addition, the City of Bristol and Covanta have a community benefit agreement in place.

Based on the foregoing, Covanta has met the obligations of the approved Environmental Justice Public Participation Plan. Covanta remains committed to maintaining the on-going dialogue with the community and to responding to inquiries upon request.

6.0 Certification

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in the submitted information may be punishable as a criminal offense, in accordance with section 22A-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

Preparer Name: **George Drew** Title: **Regional Environmental Manager**

Preparer Signature: George Drew Date: **April 29, 2019**

Applicant Name: **Joseph Vitale** Title: **Manager**

Applicant Signature: Date: **April 29, 2019**

APPENDIX A

COVANTA BRISTOL, INC.

EJ PUBLIC PARTICIPATION MEETING

OUTREACH DOCUMENTATION

City Postings
Newspaper Advertisement
Signs
Written Notices

Posted on: January 22, 2019

Public Information Meeting-Covanta to add medical waste materials to make energy

PUBLIC INFORMATIONAL MEETING ANNOUNCEMENT- OPEN TO THE PUBLIC

Covanta Bristol, Inc. is hosting an informational meeting to obtain approvals to add specific additional medical wastes to their current list of approved wastes that are combusted to make energy.

Where: Bristol City Hall, Council Chambers
When: February 19, 2019 at 6:00 P.M.

INTERESTED PARTIES PLEASE RSVP *PRIOR TO THE MEETING* BY CONTACTING:

Mr. George Drew, Regional Environmental Manager, Covanta.
Tel: 978-241-3025, Email: gdrew@covanta.com or;

Mr. Joseph Vitale, Business Manager, Covanta.
Tel: 860-589-1949, Email: jvitale@covanta.com

AGENDA ITEMS:
GENERAL INTRODUCTION
LAYOUT OF THE FACILITY
UNDERSTANDING FACILITY OPERATIONS
HEALTH AND SAFETY AT THE FACILITY
ENVIRONMENTAL PERFORMANCE
MATERIALS COMBUSTED FOR ENERGY
PROPOSED APPROVALS
QUESTIONS AND ANSWERS

Tools

RSS

Notify Me

Categories

- All Categories
- Home
- Home - Police
- Home - Public Works
- Home - Town Clerk

Next Ü
Emergency Parking Ban Lifted-Winter Parking Ban Still in Effect

OTHER NEWS IN HOME

Emergency Parking Ban Lifted-Winter Parking Ban Still in Effect

Posted on: January 22, 2019

Parking Ban Reminder

Posted on: January 18, 2019

Board of Public Works Meeting Rescheduled

Posted on: January 17, 2019

Gov. Lamont Announces Public-Private Partnership to Assist Essential Federal Workers During Shutdown

Posted on: January 16, 2019

Martin Luther King Jr. Day

Posted on: January 15, 2019

Winter/Snow Operations

Posted on: January 15, 2019

Senior Volunteer Tax Relief Program

Posted on: January 9, 2019

2019 Yard Waste Season

Posted on: December 13, 2018

Curbside Barrel Policy Reminder

Posted on: October 23, 2018

2019 Recycle Calendars

Posted on: October 19, 2018

Attention Bristol Landlords

Posted on: October 11, 2018

Wedding Dress Collection

Posted on: September 10, 2018

Help Keep Bristol Clean & Green

Posted on: September 4, 2018

General Fund Expenditure and Revenue Source Graph

Posted on: July 16, 2018

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255 West St, Bristol

Rockwell Park

Green

Hall Meeting Room

3. To receive the recommen
a. To review the Depa
operations of the W
consider any additio
ambiguities as to th

b. To review the provi
i. The Police De
elements of th
provisions hav
removed from
conform to m

ii. To review the
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Commissioner
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FEB 14 PM 4:01

N AND CITY CLERK
BRISTOL, CT

MITTEE

will be held at 3:30 p.m.
ain St., Bristol, CT

PUBLIC INFORMATIONAL MEETING ANNOUNCEMENT
Covanta Bristol, Inc.
OPEN TO THE GENERAL PUBLIC

AN INFORMATIONAL MEETING REGARDING: Covanta Bristol, Inc. to obtain approvals to add specific additional medical wastes to their current list of approved wastes that are combusted to make energy.

WILL BE HELD AT: Bristol City Hall, Council Chambers

ON: February 19, 2019 at 06:00 P.M.

PRIOR TO THE MEETING, INTERESTED PARTIES MAY *RSVP* ON WEEKDAYS, WITH RESPECT TO ATTENDANCE, TO:
Mr. George Drew, Regional Environmental Manager, Covanta.
Tel: 978-241-3025, Email: gdrew@covanta.com or;

Mr. Joseph Vitale, Business Manager, Covanta.
Tel: 860-589-1949, Email: jvitale@covanta.com

THE AGENDA FOR THE INFORMATIONAL MEETING WILL BE:
(1) GENERAL INTRODUCTION
(2) LAYOUT OF THE FACILITY
(3) UNDERSTANDING FACILITY OPERATIONS
(4) HEALTH AND SAFETY AT THE FACILITY
(5) ENVIRONMENTAL PERFORMANCE
(6) MATERIALS COMBUSTED FOR ENERGY
(7) PROPOSED APPROVALS
(8) QUESTIONS AND ANSWERS

RECEIVED
2019 JAN 28 PM 12:35
TOWN AND CITY CLERK
BRISTOL, CT

Bri
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City Arts & C
Regula
Wednesday, Febru
Executive Meeting Room, City H

I. Call to Order
II. Public Participation
III. Approval of Minutes of Regula
November 14, 2018, January 1
Meeting of January 29, 2019.
IV. Communications:
- 2019 Meeting Calendar
- Updated Commission M

V. Discussion and vote of traffic h
VI. Discussion of mural project
VII. Discussion of Simpson's writer
VIII. Old Business
IX. New Business
X. Adjournment

City Hall 111 North Ma

A. March Meeting Dates
1. Street Committee - Monday March 4, 2019 5:15 p.m.
2. Sewer Committee - Wednesday March 6, 2019 5:15 p.m.
3. Miscellaneous Matters Committee- Wednesday March 6, 2019 5:30 p.m.
4. Board of Public Works - Thursday March 21, 2019 6:00 p.m.

12. New Business

A. E-Mail From Mayor Zoppo-Sassu Regarding Freedom Of Information Act

Documents:

EMailFromMayorZoppoSassuFOI.pdf

B. Credit Card Fee's Associated With The Transfer Station

Documents:

CreditCardFeesAssociatedWithTransferStation23Jan19.pdf

C. BOF TRANSFER STREETS DIVISION 11FEB19

Documents:

DPW.WPCFY2019.2020BudgetMemo.pdf

I. Fleet Vehicle And Equipment 3 Year Program 13FEB2019

Documents:

FleetVehicleAndEquipment3YRProgram.pdf

J. Spring 2019 Paving Program 13FEB19

Documents:

Spring2019PavingProgram13FEB19.pdf

13. Addendum
14. Adjournment
15. Signature

The Bristol Press Classifieds

PLACING AN AD IS EASY. JUST CALL! 860-583-2378

Legals

City of Bristol
Bristol Development Authority
Community Development Block Grant Program
2019-2020

Public Hearing

February 21, 2019 in City Council Chambers at 5:00 PM

Bristol City Hall
111 No. Main Street
Bristol, CT

PURPOSE OF THIS PUBLIC HEARING

To provide Bristol residents and providers of goods and services with an opportunity to discuss the City's housing and community needs and problems; to express preference for proposed solutions, and to present 2019-2020 Community Development Block Grant funding requests for review and comment.

For further information or assistance or to discuss your programs/projects, contact: Community Development Coordinator Bristol Development Authority at City Hall, 111 North Main Street, Bristol, CT 06010 (860) 584-6185; or David Sgro, Housing and Project Specialist (860) 584-6189.

ANNOUNCEMENTS

Notices

CANADIAN RIVER CRUISING. Experience the beauty and history of Canada's Rivers for 4-7 nights on a replica steamboat. Call 1-800-267-7868 for your complimentary brochure StLawrenceCruiseLines.com

MERCHANDISE

Wood/Woodstoves

FIREWOOD! FIREWOOD! FIREWOOD! 860-922-7738

Wanted to Buy

ALWAYS BUYING Vintage musical instruments inc guitars, amps, trumpets saxophones, accordions Vintage electronics inc Ham, CB, shortwave radios, hi-fi audio, watches Antiques inc one item or whole estates, clocks, military, cameras, toys, posters, art, jewelry, signs, more. 860-707-9350

FREON R12 WANTED: CERTIFIED BUYER will PAY CASH R12 cylinders or cases of cans. (312) 291-9169 www.refrigerantfinders.com

EMPLOYMENT

Full Time Help Wanted

EARN $500 A DAY (SALES) Final Expense Insurance
- Exclusive Leads
- Local Training/Support
- Everyday is Payday
- Agent Health/Dental Benefits
- Incentive Trips

CALL 860-357-6904
www.thgmsu[illegible].com

Full Time Help Wanted

PARTS CLEANER/CHIPS SPINNER. Will train. Some heavy lifting req'd.
Apply in person:
Olson Brothers Co
272 Camp St,
Plainville

REAL ESTATE FOR RENT

Houses for Rent

BRISTOL - 4 BR, $1,450. Avail 2/1 860-729-1010 or 860-559-9349 RE

Business/Commercial

BRISTOL - 27 Middle St. 1400 sf retail outlet (former nail salon) Lots of traffic. Gas ht. $1,400 + util 860-729-1010 or 860-729-4645

Industrial Space

BRISTOL - All units inc some heat & moderate electricity
900 sq ft office, work space, BA, $850
1300 sq ft open high ceilings, $800
2100 sf. Office private BA, 1st FL loading dock 3 phase power $1,250
2600 sq ft mfg space Inc sm office, private BA, loading dock, clean space, hvy power $1,500
Call 860-729-1010 or 860-729-4645

Industrial Space

BRISTOL - Cabinet shop. Fully equipped. For lease. 4,000 sf. $2,250 inc some heat & elec. 860-729-1010 or 860-729-4645

Mobile Homes

BRISTOL
2 BR, $28,000
Liberty Mobile Homes
www.mhparksinc.com
(860) 747-6881

SUDOKU

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	4	7	8			2		
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See Sudoku solution on TV page.


Bristol
Resource
Recovery
Facility
COVANTA
ENERGY

Mailing Addresses of Abutters			
Name	**Lot**	**Address**	**Comments**
Industrial Realty Company LLC	04-6	785 Middle Street	
Industrial Realty Company LLC	04-5	785 Middle Street	
Covanta Bristol Inc	04-41-A	170 Enterprise Drive	
RFD Realty LLC	04-4	711 East Johnson Avenue	
R V Enterprises LLC	04-27B	136 Enterprise Drive	
JHJ LLC	04-28	156 Enterprise Drive	
Rosemar Realty LLC	04-13	234 Middle Street	Unable to deliver
City of Bristol	04-41B	111 North Main Street	Sent via Mayor's office package. See Town officials tab
City of Bristol	04-17	111 North Main Street	
Yarde Realty Co	04-24	P.O. Box 1800	Sent US mail
Yarde Realty Co	04-27C	P.O. Box 1800	

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, February 7, 2019 12:33 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903991114420

Your package has been delivered.

Delivery Date: Thursday, 02/07/2019
Delivery Time: 12:29 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903991114420
Ship To:	Industrial Realty Company LLC 785 MIDDLE ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	RECEIVER COTE
Signature Required:	A signature is required for package delivery

Download the UPS mobile app

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, February 7, 2019 4:57 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993000245

Your package has been delivered.

Delivery Date: Thursday, 02/07/2019
Delivery Time: 04:52 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993000245
Ship To:	RFD Realty LLC 711 E JOHNSON AVE CHESHIRE, CT 06410 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RESIDENTIAL DUPONT
Signature Required:	A signature is required for package delivery

Download the UPS mobile app

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, February 7, 2019 12:03 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993362453

Your package has been delivered.

Delivery Date: Thursday, 02/07/2019
Delivery Time: 11:59 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993362453
Ship To:	RV Enterprises LLC 136 ENTERPRISE DR BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER JOHN
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, February 7, 2019 12:08 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993062867

Your package has been delivered.

Delivery Date: Thursday, 02/07/2019
Delivery Time: 12:01 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993062867
Ship To:	JHJ LLC 156 ENTERPRISE DR BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER SCOT
Signature Required:	A signature is required for package delivery

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Mailing Addresses of Town Officials			
Position	**Name**	**Mailing Address**	**Notes**
Chief Elected Official (Mayor)	Ellen Zoppo-Sassu	Mayor's Office, 3rd Floor 111 North Main St. Bristol, CT 06010	One package sent to Mayor's office with individual letters addressed to each individual
City Council members	Greg Hahn		
	Joshua Medeiros		
	David Preloleski		
	Peter Kelley		
	Dave Mills		
	Mary Fortier		
Zoning Enforcement Officer	Monica Holloway		
Chief Building Official	Guy Morin		
Bristol Parks and Recreation			
Local Environmental Commission (Mayor's Task Force on Energy Consumption) - Chairman	Frank Stawski	Energy Commission	Commission disbanded on 9/4/18. City Council Meeting and Energy Commission was formed.
Local Environmental Commission (Mayor's Task Force on Energy Consumption) - Renewable Energy	Jennifer Arasimowicz		
Local Environmental Commission (Mayor's Task Force on Energy Consumption) - Conservation/Environment	Greg Fortier		
State Representative	Christopher Ziogas	Legislative Office Building, Room 4016 Hartford, CT 06106-1591	300 Capitol Drive, Hartford, CT
State Senator	Henri Martin	State Senator Henri Martin Legislative Office Building Room 3400 Hartford, CT 06106	rm 2403 per his website
Local Health Official (Director of Health, Bristol-Burlington Health District)	Marco Palmeri	240 Stafford Avenue, Bristol, CT 06010	
Bristol Chamber of Commerce		440 North Main Street, Bristol, CT	

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Friday, February 8, 2019 11:43 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903991038370

Your package has been delivered.

Delivery Date: Friday, 02/08/2019
Delivery Time: 11:36 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903991038370
Ship To:	City of Bristol 111 N MAIN ST FLOOR 3RD BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE SAVINO
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 12:43 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903990102819

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 12:38 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903990102819
Ship To:	Representative Christopher Ziogas 300 CAPITOL AVE HARTFORD, CT 06106 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	DOCK MARTINEZ
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 12:43 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903990253406

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 12:38 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903990253406
Ship To:	SENATOR HENRI MARTIN 300 CAPITOL AVE HARTFORD, CT 06106 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	DOCK MARTINEZ
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, February 7, 2019 11:13 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E904092934281

Your package has been delivered.

Delivery Date: Thursday, 02/07/2019
Delivery Time: 11:06 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E904092934281
Ship To:	Bristol Chamber Commerce 440 N MAIN ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	OFFICE BOMBARD

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 1:53 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903990545181

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 01:48 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903990545181
Ship To:	Director Health Bristol Burlington 240 STAFFORD AVE BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	OFFICE ONFI
Signature Required:	A signature is required for package delivery

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Sensitive Receptors Listed in Table 1			
Name	**Address**	**Mailing Address (If different)**	**Comments**
IDEX Health & Science	110 Halcyon Dr, Bristol, CT 06010		
Bear Creek Campground	185 Enterprise Dr, Bristol, CT 06010	Lake Compounce Family Theme Park 822 Lake Avenue Bristol, CT 06010	
Lake Compounce	185 Enterprise Dr, Bristol, CT 06010		
DoubleTree By Hilton	42 Century Dr, Bristol, CT 06010		
Pediatric Associates	43 Enterprise Dr Suite 1, Bristol, CT 06010		Unable to deliver before meeting
Bright Horizons Day Care	205 Enterprise Dr, Bristol, CT 06010		
Morin, A Kingspan Group Company	685 Middle St, Bristol, CT 06010		
A Place to Grow Too Day Care	271 Enterprise Dr, Bristol, CT 06010		
Clean Harbors Environmental	51 Broderick Rd, Bristol, CT 06010		
ESPN	700 Birch St, Bristol, CT 06010	ESPN Plaza Bristol, CT 06010	
ESPN Plaza	285 Middle St, Bristol, CT 06010		
Bristol Adult Education	210 Redstone Hill Rd #2, Bristol, CT 06010		
Bristol Physical Therapy, LLC	400 Middle St, Bristol, CT 06010		
F K Bearings Inc	865 W Queen St, Bristol, CT 06010		
Bristol Head Start	254 Lake Ave, Bristol, CT 06010		
Haven Corporation	835 W Queen St #2,Bristol, CT 06010		Address no longer occupied by anyone
Pine Lake Park	441 Emmett St	City of Bristol, Parks and Recreations, 111 North Main St. 2nd Floor Bristol, CT 06010	See Town Officials tab
Central Connecticut Family Health Center	22 Pine St, Bristol, CT 06010		
Bristol Hospital	41 Brewster Rd, Bristol, CT 06010		

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 11:29 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993812618

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 11:23 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993812618
Ship To:	IDEX Health & Science 110 HALCYON DR BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	RECEIVER DANA
Signature Required:	A signature is required for package delivery

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Lake Compounce\Bear Creek Campground

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1Z034E903992740224

Weight
0.50 LBS

Service

UPS 3 Day Select®

Shipped / Billed On
02/05/2019

Additional Information

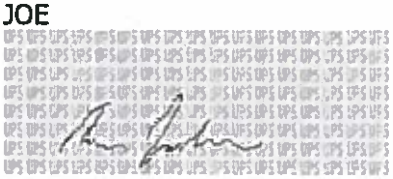
Signature Required

Delivered On

02/06/2019 1:41 P.M.

Delivered To
822 LAKE AVE
BRISTOL, CT, 06010, US
Received By

JOE



Left At
Receiver

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 10:12 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993874034

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 10:05 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993874034
Ship To:	DoubleTree by Hilton 42 CENTURY DR BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	RECEIVER JULIA
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 9:47 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903990656258

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 09:42 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903990656258
Ship To:	Bright Horizons Day Care 545 MIDDLE ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	RECEIVER RICK
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 9:53 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903991617324

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 09:46 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903991617324
Ship To:	FK Bearings Inc 865 W QUEEN ST SOUTHINGTON, CT 06489 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	DOCK SOKO
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 10:04 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903991231099

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 09:56 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903991231099
Ship To:	ESPN 383 MIDDLE ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	MAIL ROOM ROTTIER
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 10:33 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903990197763

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 10:26 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903990197763
Ship To:	Bristol Hospital 41 BREWSTER RD BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	DOCK PERRI
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 10:33 AM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903992351270

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 10:29 AM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903992351270
Ship To:	A Place to Grow Too Day Care 271 ENTERPRISE DR BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER KATHARINA
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 12:08 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903992552660

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 12:01 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903992552660
Ship To:	Morin 685 MIDDLE ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER COX
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 12:23 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903992847717

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 12:18 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903992847717
Ship To:	Bristol Physical Therapy, LLC 400 MIDDLE ST BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER REARDON
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 1:03 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903994400301

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 12:57 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903994400301
Ship To:	Bristol Adult Education 210 REDSTONE HILL RD BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	OFFICE GARAY
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 1:18 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903991176088

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 01:14 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903991176088
Ship To:	Clean Harbors Environmental 51 BRODERICK RD BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	OFFICE BUSH
Signature Required:	A signature is required for package delivery

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Drew,George

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, February 6, 2019 1:23 PM
To: Drew,George
Subject: UPS Delivery Notification, Tracking Number 1Z034E903993233137

Your package has been delivered.

Delivery Date: Wednesday, 02/06/2019
Delivery Time: 01:17 PM

At the request of COVANTA HAVERHILL, INC. this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z034E903993233137
Ship To:	Bristol Head Start 254 LAKE AVE BRISTOL, CT 06010 US
UPS Service:	UPS 3 DAY SELECT
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	RECEIVER TORRES
Signature Required:	A signature is required for package delivery

Download the UPS mobile app

Central CT Family Health Center

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1Z034E903994099353

Weight
0.50 LBS

Service

UPS 3 Day Select®

Shipped / Billed On
02/05/2019

Delivered On

02/08/2019 12:10 P.M.

Delivered To
22 PINE ST
BRISTOL, CT, 06010, US
Received By

ASHMORE

Left At
Receiver

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 03/11/2019 3:41 P.M. EST

APPENDIX B

COVANTA BRISTOL, INC.

EJ PUBLIC PARTICIPATION MEETING

DOCUMENTATION

Sign in sheet
Presentation Boards
Photographs

Covanta Bristol EJ mtg
Bristol City Hall, Council Chambers
Feb 19, 2019

NAME	EMAIL	PHONE
George Drew	gdrew@covanta.com	978 697 6547
Les Griffith	LGRIFFITH@COVANTA.com	862.222.5792
Mark Bobman	m.bobman@brrfoc.org	
Raymond Rogozinski	RAYMOND ROGOZINSKI@BRISTOLCT.GOV	860-584-6125
Harley Graime	harleygraime@bristolct.gov	860-866-7262
Peter Pelkey		(860) 589.6694
Frazier Blaylock	fblaylock@covanta.com	
Ellen Zeppo-Sasson	ellenzeppo@comcast.net	

COVANTA

Powering Today Protecting Tomorrow

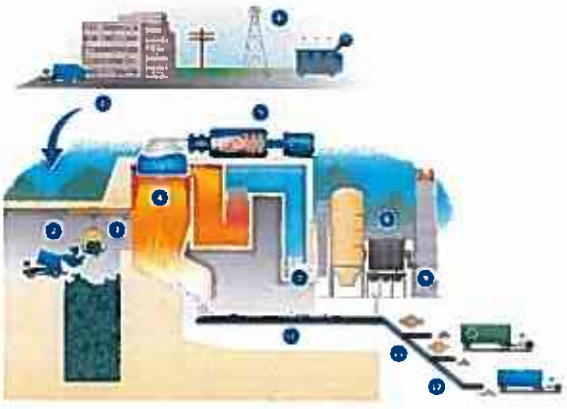
Covanta Bristol

- Serves the waste disposal needs of 300,000 area residents
- Processes 650 tons of solid waste per day
- Generates over 16 megawatts of renewable energy – enough to power over 10,000 homes
- Recycles 6,000 tons of metal annually – enough to build approximately 5,000 cars
- Employs 38 skilled professionals – 81 total in CT

How the EfW Process Works

1. Post-recycled waste is picked up
2. Delivery to EfW Bunker
3. Transferred to Combustion Chamber
4. Clean Combustion Process
5. Steam is used to generate electricity
6. Electricity is distributed to local grid
7. State-of-the-art air pollution control equipment cools and scrubs gases
8. Baghouse captures particulate emissions
9. Emissions are continuously monitored
10. Ash residue is collected
11. Metals are recovered for recycling
12. Residual material is beneficially reused or disposed in landfill

One Ton of Municipal Solid Waste (MSW)



→ 500 - 750 kWh of Power

→ ~50 lbs. of Recycled Material

→ Ash: ~10% of Original Volume

COVANTA

Powering Today. Protecting Tomorrow.

World Leader in Energy-from-Waste

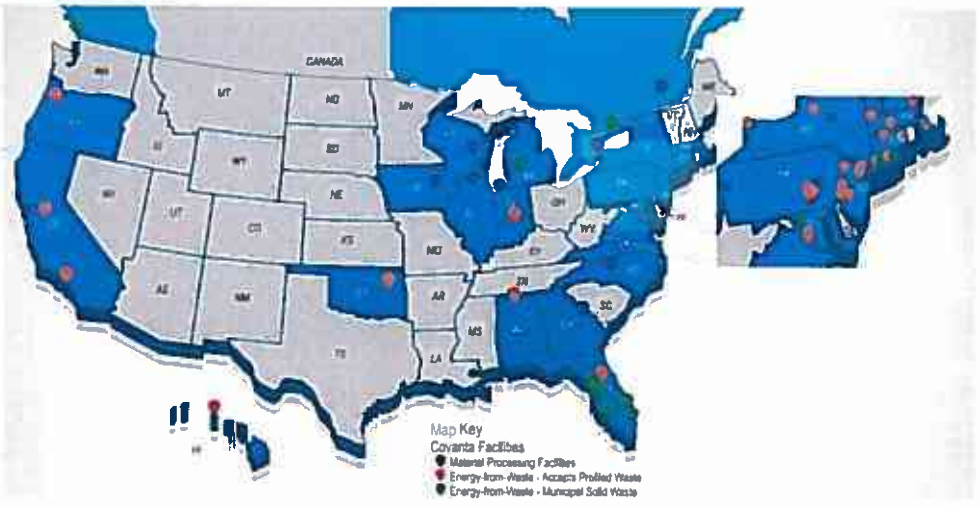
- Operates **44 modern EfW facilities** in North America and Europe

- Annually processes **22 million tons** of waste

- Generates enough clean, renewable energy to power **over 1 million homes**

- Annually **recycles** enough steel to build **six Golden Gate Bridges** and enough aluminum for **3 billion soda cans**

- **3,800 professionals** employed in North America



COVANTA
Powering Today. Protecting Tomorrow.

Environmental and Safety Record

Safety is our Core Value

At Covanta, nothing is more important than safety and health…not production, not throughput, not profits. Safety is at the core of everything we do.

Safety excellence at Covanta Bristol

1,100+ days without an OSHA recordable injury!

Outstanding Emissions Performance

After passing through a state-of-the art emissions control system, 99.9+% of what comes out of the stack are normal components of air, including water vapor, nitrogen, oxygen, and CO_2. The remaining constituents – see table below – are well below allowable limits set by State and Federal regulators that have demonstrated protection of human health and the environment.

	Units	Permit Limits	Covanta Bristol 2009 - 2018 Actual Results	% BELOW Limit
Particulate Matter	mg / dscm	25	3	88%
Dioxin/Furan	ng / dscm	30	2	95%
Mercury	µg / dscm	28	2	92%
Lead	µg / dscm	400	12	97%
Cadmium	µg / dscm	35	1	97%
NOx	ppm	120/150	142	10%
SO2	ppm	29	6	78%
CO	ppm	100	29	71%
HCl	ppm	29	6	79%

COVANTA
Powering Today. Protecting Tomorrow.

Covanta in the Community

Helped install Community Garden at Cambridge Park Boys & Girls Club

CONNECTICUT RECYCLERS COALITION
Member and sponsor, Connecticut Recyclers Coalition

BRISTOL CHAMBER OF COMMERCE
Business | Community | Prosperity
Member, Bristol Chamber of Commerce


Member and sponsor, Pequabuck River Watershed Association


Sponsor, Annual Beautification Awards Breakfast


Donated City of Bristol Rx Drop Box with free annual disposal


Sponsor, Covanta Cove exhibit at Mystic Aquarium

COVANTA
Powering Today Protecting Tomorrow

Regulated Medical Waste

What it is

Regulated Medical Waste (RMW) is material generated in health care or medical research that requires special treatment and disposal. Laws require that some RMW must be incinerated in order for the material to be rendered non-infectious.

Examples of RMW to be accepted by Covanta include: IV bags, tubes, needles and other sharps, tissue samples, and contaminated bedding, gowns and bandages.

What it is not

Covanta's corporate policy strictly prohibits the acceptance of some medical waste including: human fetal tissue, anatomical waste, large pathological waste, and hazardous or radioactive waste.

How does Covanta handle RMW?

- Covanta Marion (OR) and Covanta Huntsville (AL) have been processing RMW for over two decades
- A rigorous Covanta approval and inspection process ensures compliance with rules and standards
- Non-conforming boxes are not picked up by providers
- Automated systems limit employee interaction with RMW, including our Automated Hopper Feed System at Covanta Marion, the first of its kind for RMW

COVANTA
Powering Today Protecting Tomorrow

Proposed Changes at Covanta Bristol

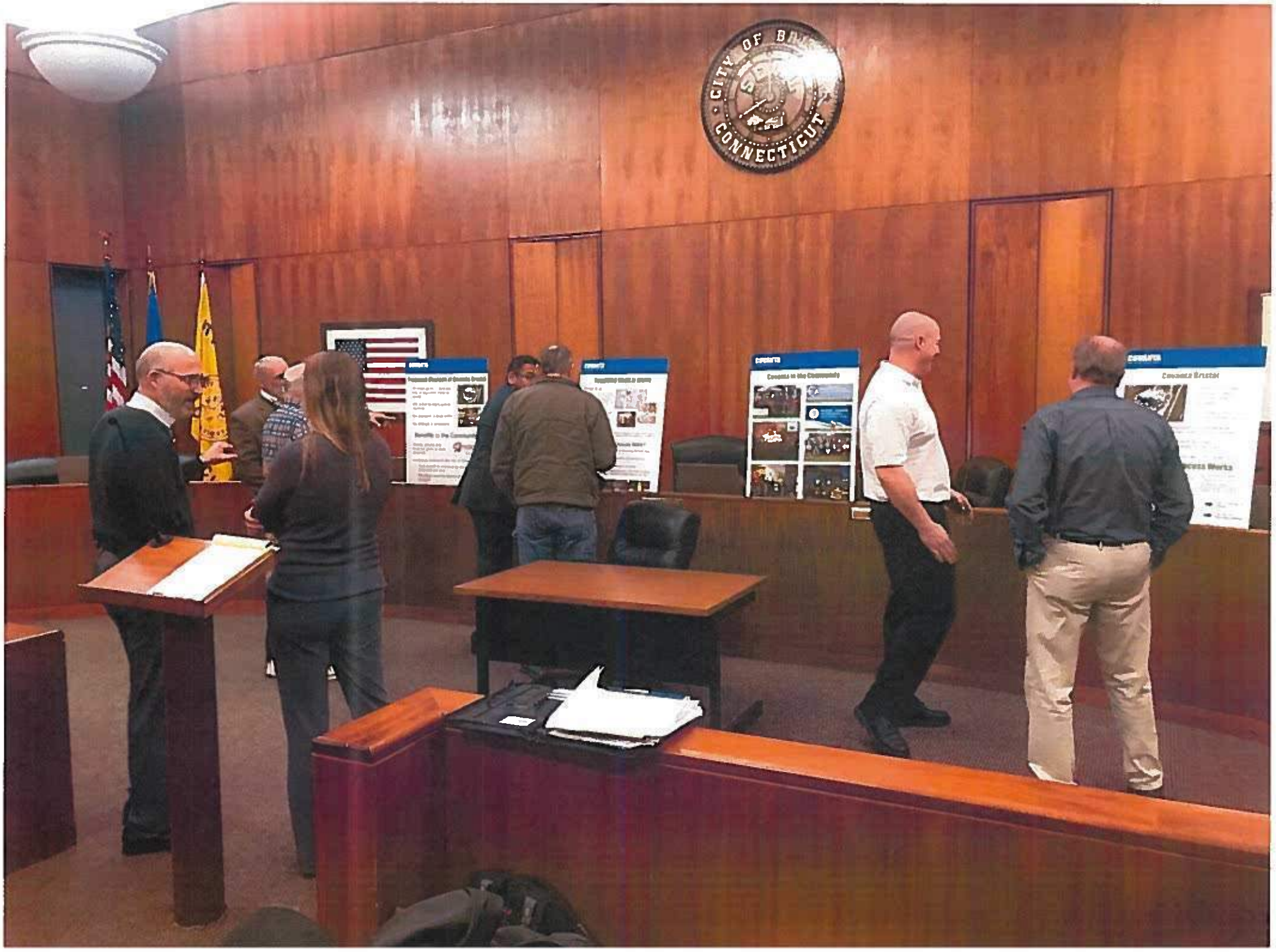
- Process up to 77 tons per day of regulated medical waste
- 8% of the facility's overall capacity
- **No increase** in truck traffic
- **No change** in emissions

Benefits to the Community

- Priority service and discount given to local hospitals

Bristol CONNECTICUT All Heart

- Additional revenue to the City of Bristol:
  - Host benefit to increase by approximately $450,000 per year
  - $6 million over the course of the 12-year contract
  - In 2018, revenues from Covanta to the City were $1.75 million


CITY OF
CONNECTICUT

APPENDIX C

COVANTA BRISTOL, INC.

EJ PUBLIC PARTICIPATION PLAN

Connecticut Department of
Energy & Environmental Protection
Office of the Commissioner
Environmental Justice Program

Environmental Justice Public Participation Plan

Prior to a permit application being filed with the Department, an Environmental Justice Public Participation Plan (the "Plan") must be submitted and approved ***for 1) any affecting facility,*** in accordance with Section 22a-20a of the Connecticut General Statutes, ***and 2) any additional facility applicable under the Department's Environmental Justice Policy,*** *that is proposed to be located or expanded in an* ***environmental justice community***. For definitions and guidance, refer to the ***Environmental Justice Public Participation Guidelines ("Guidelines") (www.ct.gov/deep/environmentaljustice)***. If the Plan is required for your project, complete and submit this form to the address indicated above.

Once the Plan has been approved by the Department, the applicant becomes responsible for fully implementing its approved Plan. Prior to issuance of a Notice of Tentative Determination by the Department, the applicant must submit a final report, documenting the implementation of the Plan. Should any of the information supplied in this form or in the approved Plan change, you must contact the Environmental Justice Program immediately to determine if an amendment to your approved Plan must be submitted.

Label all supporting documents to correspond with the outline provided in this document, e.g., "Part II A: Project Summary".

Part I: Proposed Applicant Information

1. APPLICANT INFORMATION

Applicant: **Covanta Bristol, Inc.**

Mailing Address: **170 Enterprise Drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Business Phone: **(860) 589-6470** ext. Fax: **860-583-3398**

Contact Person: **Joseph Vitale** Phone: **860-589-1949** ext.

Email: **jvitale@covanta.com**

Applicant (check one): ☐ individual ☒ company ☐ federal gov't ☐ state agency ☐ municipality

If a Company, list company type (e.g., corporation, limited partnership, etc.):

Corporation

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as requested above.

2. WILL YOUR PERMIT APPLICATION INVOLVE: (check one):

☐ A new facility ☒ An expansion of a facility

3. FACILITY NAME AND LOCATION

Name of facility: **Bristol Resource Recovery Facility (Covanta Bristol, Inc.)**

Street Address or Location Description: **170 Enterprise Drive**

City/Town: **Bristol** State: **CT** Zip Code: **06010**

Tax Assessor's Reference: Map **04** Block Lot **41-A**

Part II: Informal Public Meeting Requirements

Complete this part, identifying the time and place of the meeting and the methods that will be used to publicize it. Please note, the Department cannot take any action on the applicant's permit earlier than sixty days after the informal public meeting takes place.

A. Identify Time and Place of Informal Public Meeting

Identify a time and place where an informal public meeting will be held which must take into consideration convenience for the residents of the affected environmental justice community. Be sure to confirm the **date, time and place** of the meeting with the Department's Environmental Justice Program (860-424-3044or edith.pestana@ct.gov).

- Approximate Date: **February 19, 2019**
- Place: **Bristol City Hall, Council Chambers**
- Time: **06:00 P.M**.

To ensure an effective public meeting the following is advised: (1) schedule meetings at convenient times (i.e., evenings) and locations for community members; (2) announce the meeting through community channels, such as church bulletins, local papers and radio broadcasts; (3) announce meetings in common languages (e.g., Spanish radio or newspaper); (4) provide documentation and speakers in the appropriate languages other than English, if necessary; (5) provide information regarding applicable laws (state and local) with the appropriate contacts. Provide easy to understand information to community members. Respond to all comments. Be direct, open and honest regarding the expectations and limitations of the proposed facility.

Refer to Part III of this form for information to be presented at the meeting.

B. Identify Communication Methods By Which to Publicize the Public Meeting

1. At a minimum, applicants are required to publish notice of the date, time and nature of the informal public meeting.

   - Name of newspaper(s): **Bristol Press**
   - Date(s) notice will be published: **February 4, 2019**

   The notice must be a minimum one-quarter page advertisement in a newspaper having general circulation in the area affected and any other appropriate local newspaper serving such an area, in the Monday issue of a daily publication or any day in a weekly or monthly publication. Refer to newspaper of general circulation (www.ct.gov/deep/permits&licenses) or contact the Environmental Justice Program at 860-424-3044 for more information on appropriate local and general circulation newspapers. See attached notice template.

   The notice must be published not less than 10 days prior to and no more than 30 days prior to the informal public meeting.

Part II: Informal Public Meeting Requirements (continued)

2. Other communication methods include but are not limited to (check as applicable):

☒ posting a sign on the subject property in English and other common languages spoken by at least twenty percent of the population that reside within a one-half mile radius of the subject facility, subject to any local regulations and ordinances;

☒ written notification to local and state elected officials , identified in accordance with Part III. C.1. of this document;

☐ written notification to neighborhood and environmental groups, identified in accordance with Part III. C.2. of this document, in English and other languages appropriate for the target audience;

☐ posting of a similar notification of the informal public meeting on the applicant's web site, if applicable.

☒ Other communication methods: Please specify: **Notice will be placed on City of Bristol's Facebook page. Emails will be sent to key stakeholders advising of the meeting and requesting them to forward information to their key contacts of interest to ensure that all parties have the opportunity to be properly informed.**

Part III: Measures to Facilitate Meaningful Public Participation

At a minimum, each of the following measures must be completed and submitted with this Plan.

A. Identification of Proposed Facility or Proposed Expansion of a Facility

1. Identify the potential environmental and health impacts of such facility or the expansion of such facility, i.e., increased air emissions, water discharges, material management issues, etc.

2. Identify permits and general permits needed for the project by completing the *Permit Checklist* (DEP-APP-001A).
It is important to complete the Checklist thoroughly to identify to the public what types of Department permits may be needed for such facility.

3. Identify efforts to mitigate the potential environmental and health impacts of such facility.

4. Identify any pollution control measures associated with the project.

5. Describe the location of the proposed facility with respect to residents and other community members (e.g., schools, parks, where people live, work etc.), including vehicle traffic patterns, noise, hours of operation and proximity to sensitive receptors, which could cause concerns in the community.

B. Identification of Impacted Community

1. Identify potentially impacted community (e.g., local neighborhood and religious institutions, schools and sensitive receptors such as day care centers and clinics and hospitals, local businesses, community based organizations and environmental organizations).

2. Identify community's demographics including: age, income, language, population, race/ethnicity, and economic status.

Efforts should be made to identify and discuss social and economic conditions as well as the cultural basis for some of the community's concerns and needs.

Part III: Measures to Facilitate Meaningful Public Participation (continued)

B. Identification of Impacted Community (continued)

3. Identify community(s) planned and existing types of development.

Maps may be used to provide information on related environmental considerations. Keep in mind that communities may define themselves in non-geographic ways using cultural and social terms (e.g., retirement center, parks, places of worship, social clubs, etc.). In any given area there may also be multiple overlapping communities and interests.

C. Identification of Individuals/Groups to Seek and Notify

1. Notify town(s) officials in which the affecting facility is proposed to be located or expanded. At a minimum, identify the following:

- ☐ chief elected official of the applicable municipality**: Mayor Ellen Zoppo-Sassu**
- ☐ state representative of the applicable municipality**: Representative Christopher Ziogas**
- ☐ state senator of the applicable municipality**: Senator Henri Martin**

Check other individual/groups to notify.

- ☒ local building official;
- ☒ the zoning enforcement officials;
- ☒ local health officials; and
- ☒ any local environmental commission, committee or officials.

For information on municipal officials, please refer to the latest edition of the "State of Connecticut Register and Manual" (www.sots.ct.gov/sots/cwp/view.asp?a=3188&Q=392636), or contact municipal offices.

2. Identify the following to notify: abutting property owners, neighborhood residents, community leaders, (neighborhood and religious leaders, block watch captains, etc.), key community members; environmental commissions; civic organizations (e.g. Chamber of Commerce); local businesses; organizations; and neighborhood groups.

For assistance in obtaining environmental justice and other local contacts in the geographic area of interest, contact the Department's Environmental Justice Program at 860-424-3044 or edith.pestana@ct.gov.

Part III: Measures to Facilitate Meaningful Public Participation (continued)

D. Proposed Outreach Efforts

Identify proposed outreach efforts which will be implemented, in addition to the informal public meeting required pursuant to Part II of this document.

Check proposed outreach efforts as applicable:

☒ Media outreach (e.g., sign, newspapers, radio). Include a copy of the planned publication or broadcast. For a list of alternative media, contact the Department's Environmental Justice Program at 860-424-3044 or edith.pestana@ct.gov.

☒ open house; facility tours

☒ Meetings with neighborhood and community leaders, residents, business, etc.

☐ Other (please specify):

E. Identify Other Measures, if applicable:

Attach additional sheets if necessary with the information.

Presentations will be held with city departments including:

- **City Council**
- **Board of Water Commissioners**
- **Board of Park Commissioners**
- **Board of Fire Commissioners**
- **Board of Police Commissioners**
- **Bristol Development Authority (Economic Development entity)**
- **Bristol Board of Finance**

Part IV: Certification

The proposed applicant *and* the individual(s) responsible for actually preparing the Plan must sign the following Certification. Refer to the ***Guidelines*** for information on who should sign the certification. An application will be considered incomplete unless all required signatures are provided. If the applicant is the preparer, please mark N/A in the spaces provided for the preparer.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this Plan is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I also certify that a final report, which documents the implementation of this Plan, will be submitted to the Department ***after*** this Plan has been approved in writing by the Department and ***before*** the Department issues a Notice of Tentative Determination."

Signature of Proposed Applicant	Date: 8-15-18
Joseph Vitale Name of Proposed Applicant (print or type)	Facility Business Manager Title (if applicable)
Signature of Preparer (if different than above)	Date: 8-15-18
George Drew Name of Preparer (print or type)	Regional Environmental Manager Title (if applicable)

Note: Please submit this completed Plan with all supporting documents to:

Environmental Justice Program
Office of the Commissioner
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Refer to the ***Guidelines*** for completing the final report which must be submitted ***after*** this Plan has been approved in writing by the Department and ***before*** the Department issues a Notice of Tentative Determination.

[SAMPLE TEMPLATE FOR INFORMAL PUBLIC MEETING ANNOUNCEMENT]

PUBLIC INFORMATIONAL MEETING ANNOUNCEMENT

Covanta Bristol, Inc.

OPEN TO THE GENERAL PUBLIC

AN INFORMATIONAL MEETING REGARDING: Covanta Bristol, Inc. to obtain approvals to add specific additional medical wastes to their current list of approved wastes that are combusted to make energy.

WILL BE HELD AT: Bristol City Hall, Council Chambers

ON: February 19, 2019 at 06:00 P. M.

PRIOR TO THE MEETING, INTERESTED PARTIES MAY *RSVP* ON WEEKDAYS, WITH RESPECT TO ATTENDANCE, TO:

Mr. George Drew, Regional Environmental Manager, Covanta.
Tel: 978-241-3025, Email: gdrew@covanta.com or;

Mr. Joseph Vitale, Business Manager, Covanta.
Tel: 860-589-1949, Email: jvitale@covanta.com

THE AGENDA FOR THE INFORMATIONAL MEETING WILL BE:

(1) GENERAL INTRODUCTION
(2) LAYOUT OF THE FACILITY
(3) UNDERSTANDING FACILITY OPERATIONS
(4) HEALTH AND SAFETY AT THE FACILITY
(5) ENVIRONMENTAL PERFORMANCE
(6) MATERIALS COMBUSTED FOR ENERGY
(7) PROPOSED APPROVALS
(8) QUESTIONS AND ANSWERS

ATTACHMENT I

STATEMENT OF CONSISTENCY WITH SOLID WASTE MANAGEMENT PLAN

Solid Waste Facilities

Attachment I: Statement of Consistency with the Solid Waste Management Plan

Please complete the form in accordance with the *Instructions for Completing the Permit Application for Construction and Operation of a Solid Waste Facility* (DEP-SW-INST-100). This form must be submitted with the *Permit Application for Construction and Operation of a Solid Waste Facilit*y (DEP-SW-APP-100). If additional space is required, please attach supplementary pages. Print legibly or type.

The Department of Environmental Protection (DEP) reserves the right to request any other information it deems pertinent.

Applicant Name: **Covanta Bristol, Inc.**
(As indicated on the *Permit Application Transmittal Form*)

Identify the solid waste facility type: **RRF and BMW**

Part I: Source of Waste

Identify the source(s) (the specific town(s) to be served) of the waste to be transferred/ processed/disposed of and whether the waste is residential, commercial, etc. Include estimated volumes and/or tonnages from each municipality/customer.

Source (Municipality/Customer)	Waste (Residential, Commercial, etc.)	Volume/Tonnage
See, Attachment I-1	**Commercial**	**See, Attachment I-1**

Part II: Waste Types

Describe each waste type and the quantity that will be handled at the facility. Describe how each waste type will be handled on-site (e.g., compaction, mechanically processed, hand separated, composted, incinerated, etc.).

Waste Type	Quantity	Process(es)
BMW (See, Attachment I-1 for add'l info)	**57 tpd (weekly average) 114 tpd (maximum)**	**Incineration with energy recovery**

Part III: Waste Management

Identify each type of waste, how it is currently managed, and identify its long-term management plan (e.g., reused, recycled, composted, energy recovery, landfilled). If during processing a residue is generated, identify its quantity and/or percentage (e.g., tonnage or volume of residue generated and/or percentage of total waste incoming).

Waste Type	Current Management	Long-Term Management	Residue Quantity/Percentage
BMW	**Incinerate, no energy recovery**	**Energy recovery**	**21%**

Part IV: Waste Disposal

List each waste, residue and/or recyclable material and identify the final disposal facility/facilities or market(s) (e.g., list the specific facilities currently used or expected to be used in the future). Verify that the Connecticut facilities are currently permitted by DEP and the out-of state facilities are permitted by their state environmental regulatory agency and identify the permit type.

Wastes/Residues/Recyclables	Final Disposal Facility	Facility Permit Type
Residue (See, Attachment I-1 for add'l info)	**Bondi Island Ash Landfill**	**Solid Waste Ash Landfill**

Part V: Contract/Agreements with Disposal Sites and/or Markets

Identify the duration (e.g., spot market, 4 months, 5 years, etc.) of the contract/agreement between the proposed facility and the facilities or markets to which the waste will be finally transported. (Include signed copies of contracts or letters of agreement from the potential disposal sites and/or markets and attach them to this sheet.) Demonstrate that these facilities have available long-term capacity to accept each waste, residue or recyclable from this proposed facility.

Facility Name: **Bondi Island Ash Landfill (no change from existing operations)**

Contract Duration:

Long Term Capacity Demonstration for each waste/residue/recyclable:

Facility Name:

Contract Duration:

Long Term Capacity Demonstration for each waste/residue/recyclable:

Facility Name:

Contract Duration:

Long Term Capacity Demonstration for each waste/residue/recyclable:

Facility Name:

Contract Duration:

Long Term Capacity Demonstration for each waste/residue/recyclable:

Part VI: Other Solid Waste Facilities

Are there any similar solid waste facilities currently operating in the area(s) to be served by this proposed facility?

☒ Yes ☐ No

If yes, provide their names and addresses below.

Facility Name: **Stericycle, Inc. (Transfer Station)**

Address: **80 Industrial Park Road**

City/Town: **Middletown** State: **CT** Zip Code: **06457**

Facility Name: **Future Healthcare Systems, CT, Inc. (Treatment by Autoclave)**

Address: **750 South Avenue**

City/Town: **Bridgeport** State: **CT** Zip Code: **06604**

Facility Name:

Address:

City/Town: State: Zip Code:

Part VII: Statement of Consistency

In accordance with section 22a-209-4(b) (1) RCSA, the application package must include a statement by the applicant which explains how the proposal relates to and is consistent with the Solid Waste Management Plan (SWMP). Include a comparison of the facility's proposed long term waste management plan to specific goals discussed in the SWMP. ☒ Check here if additional sheets are necessary, and label and attach them to this sheet.

See, Attachment I-1.

ATTACHMENT I-1
ADDITIONAL INFORMATION

Part I: Source of Waste

Covanta is reviewing contracts with potential customers of biomedical waste (BMW), which are dependent upon the completion of this project. Covanta will provide contracts to the Connecticut Department of Energy and Environmental Protection (CT DEEP) for review prior to acceptance of BMW.

Part II: Waste Types

The facility is permitted to receive and process 716 tons per day (TPD) of municipal solid waste (MSW) and Special Wastes. Special Waste Disposal Authorization 01701245-SWDA (SWDA) allows Covanta Bristol to accept and process no more than 57 TPD of special waste, averaged over the course of one week, and no more than 114 TPD maximum on any given day. The addition of BMW to the facility operations would represent a portion of the special waste allocation.

Part IV: Waste Disposal

The facility currently disposes of ash resulting from special waste. As the BMW will be included as a portion of this special waste, additional ash is not expected to be generated over current levels.

Part VII: Statement of Consistency with the State of Connecticut Solid Waste Management Plan

Covanta is proposing to receive and process BMW by incineration with energy recovery at the Bristol Resource Recovery Facility located at 170 Enterprise Drive in Bristol, Connecticut (Facility). The addition of BMW to the special waste streams managed by the facility would represent a new waste material but would not result in an increase in volume of material or special wastes managed at the Facility.

Connecticut updated its 2006 Solid Waste Management Plan (SWMP) with the 2016 Comprehensive Materials Management Strategy (CMMS). The CMMS focuses primarily on recycling programs, waste conversion and diversion, and corporate stewardship. Covanta supports these goals. There are currently limited recycling and corporate materials stewardship options for management of BMW materials. While efforts are underway to holistically develop solutions which achieve these goals, the addition of BMW to the Facility provides a more sustainable solution to BMW management than is presently provided in Connecticut.

BMW generated in Connecticut has limited treatment and management options. Some BMW is treated by autoclaving resulting in a waste material requiring disposal. Other BMW is transported out-of-state for treatment and disposal. For example, BMW is transported to an incinerator in Maryland for proper treatment and disposal. This management solution requires trucks to drive approximately 600 miles roundtrip to transport the BMW from Connecticut to Maryland. The addition of BMW to Covanta's process provides a needed treatment and disposal outlet for BMW management in Connecticut, as well as a more sustainable option of transport as compared to trucking out-of-state. *See also*, Section 3 (Biomedical Waste Management) of the Project Narrative (Attachment A).

As noted in the CMMS, resource recovery facilities in Connecticut have a number of business challenges. The addition of BMW to the Facility provides diversification, which will support the economics of the Facility so that it continues to be a viable and sustainable business operation, now and in the future. Furthermore, the addition of BMW to the Facility will help the Connecticut healthcare industry by

providing a reliable, local outlet for its BMW management and help the economy of the local Bristol community through a host agreement.

As summarized in Section 4 (Covanta's Biomedical Waste Program) of the Project Narrative (Attachment A), Covanta's BMW program has been well established for over 30 years. The BMW program includes a rigorous compliance assurance program for waste profiling, acceptance, and auditing to ensure shipments of BMW meet specifications. Operating, maintenance, contingency, and training plans have been developed and implemented at three of Covanta's existing resource recovery facilities located in Marion County, Oregon; Lake County, Florida, and Huntsville, Alabama. Covanta's resource recovery facilities are designed with combustion controls and air pollution control technology that will destroy pathogens and ensure no increase in emissions result from the combustion of MSW together with BMW.

ATTACHMENT J

BUSINESS INFORMATION

Solid Waste Facilities

Attachment J: Business Information

All permit applications, or license transfer requests, *for a solid waste facility*, must complete this form and attach all of the listed required documentation.

Part I: General Information

1. Applicant Name: **Covanta Bristol, Inc.**
2. Facility Name: **Bristol Resource Recovery Facility**
3. Identify the solid waste facility type: **RRF and BMW**
4. Is a surety specifically required by statute or regulation for the proposed project? ☐ Yes ☒ No
5. Are you prepared to post a bond or other surety related to any permits, certificates or approvals granted to you through this application? ☒ Yes ☐ No

Part II: Required Documentation

Check each box by each of the listed requirements as verification that all documentation has been submitted. Label each attachment as listed below and include the applicant's name on each document.

Financial Stability Information:

☒ Attachment 1: A detailed statement from a Certified Public Accountant which demonstrates the financial capacity of the applicant to develop and operate the project in a manner consistent with Connecticut environmental laws and standards.

☒ Attachment 2: With respect to the costs of financing, design, construction and start-up of the proposed facility, provide the following information.

Note: for license transfer requests, if the facility is fully constructed, and already operating, provide the date operations began and skip to Attachment 3. Date Operations Began

Estimated cost and identification of the source of funds for each facility;

Identification and discussion of the proposed method of financing costs which will not be paid from the applicant's own resources;

For costs to be paid from the applicant's own resources, demonstration that such resources are available (which may include third party assurances);

Has the applicant, or its affiliates, ever implemented a project of comparable magnitude? If so, explain.

If the proposed facility involves one million dollars or more in total capital cost, include a statement from an independent third party, certifying as to the reasonableness of such information.

Part II: Required Documentation continued on next page

Part II: Required Documentation, continued

Financial Stability Information, continued:

☒ Attachment 3: With respect to the on-going operation of the facility, provide the following information:

An estimate of the cost of operating and maintaining the facility, and a discussion of the source of revenues to pay such costs;

A discussion of the financial capacity of the applicant to properly operate the facility, and the proposed method of addressing potential, unexpected costs associated with environmental compliance, breakdowns, malfunctions and related events;

If other parties will be responsible for the operation of the facility, demonstrate the ability of such parties to meet the financial capacity to do so.

Land Ownership Documents:

☐ Attachment 4: In accordance with section 22a-209-4(b)(1) RCSA, signed copies of any lease, deed or other agreements regarding the ownership, control, or use of the facility by the applicant. Such documents include but are not limited to land deeds (e.g., warranty deed; certified deed; lease agreement; etc.).

Agreements Between Parties and Service Agreements and Contracts:

☒ Attachment 5: Copies of all contracts and agreements (e.g., bridge agreements; agreements between the applicant and owner, operator, municipality(s), regional authority, markets, disposal facility(s), other processing facilities, etc.)

(Note: All contracts required by section 22a-213 CGS and section 22a-209-5 RCSA involving a municipality *must be approved by DEP*.)

Organization Chart:

☒ Attachment 6: An organization chart, which illustrates the relationship between all parties involved in the ownership and management of the facility.

ATTACHMENT J-1
DETAILED STATEMENT FROM CPA

Attached on the following page is a Report of Independent Registered Public Accounting Firm for Covanta Holding Corporation. Covanta Bristol, Inc. is 100% wholly owned and operated by Covanta Holding Corporation. *See*, Operations & Management (O&M) Plan in Attachment K for a copy of the organization chart.

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the fiscal year ended December 31, 2019**

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 1-06732

COVANTA HOLDING CORPORATION

(Exact name of registrant as specified in its charter)

Delaware			**95-6021257**
(State or Other Jurisdiction of Incorporation or Organization)			*(I.R.S. Employer Identification Number)*
445 South Street	**Morristown**	**NJ**	**07960**
(Address of Principal Executive Office)			*(Zip Code)*

Registrant's telephone number, including area code: (862) 345-5000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock	CVA	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer	Accelerated filer	Non-accelerated filer	Smaller reporting company	Emerging growth company
☑	o	o	☐	☐

(Do not check if a smaller reporting company)

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2019, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was $2.1 billion. The aggregate market value was computed by using the closing price of the common stock as of that date on the New York Stock Exchange. (For purposes of calculating this amount only, all directors and executive officers of the registrant have been treated as affiliates.)

Class	Outstanding at February 14, 2020
Common Stock, $0.10 par value	131,430,105

Documents Incorporated By Reference:

Part of Form 10-K of Covanta Holding Corporation	Documents Incorporated by Reference
Part III	Portions of the Proxy Statement to be filed with the Securities and Exchange Commission in connection with the 2020 Annual Meeting of Stockholders.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Covanta Holding Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Covanta Holding Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and financial statement schedule listed in the Index at Item 15a (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company at December 31, 2019 and 2018, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on the criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 25, 2020 expressed an adverse opinion thereon.

Adoption of New Accounting Standard

As discussed in Note 1 to the consolidated financial statements, the Company changed its method for accounting for leases in 2019.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Rookery Equity Method Investment - Variable Interest Model

Description of the Matter

As disclosed in Note 3 to the consolidated financial statements, in March 2019, the 50/50 jointly owned and governed entity ("Covanta Green") between Covanta and Green Investment Group was used to fund an 80% investment in the Rookery project, an energy from waste facility being built in Bedfordshire, England (the "Facility"). The Company provides technical oversight and became a service provider for the Facility. The Company accounts for its 50% equity interest in Covanta Green under the equity method of accounting. For the year ended December 31, 2019, the Company recorded a $56 million gain on sale of business and investments which is included in the "Gain (loss) on sale of assets" in the consolidated statement of operations.

Auditing the assessment of whether the Company has a controlling financial interest in Covanta Green, which was determined to be a variable interest entity, was complex and required significant judgment. Management's assessment of whether Covanta is the primary beneficiary under the variable interest model is highly judgmental and could have a significant effect on the accounting for the Company's 50% equity interest in Covanta Green and the gain recorded in the consolidated statement of operations.

How We Addressed the Matter in Our Audit

We tested the controls over the Company's evaluation of the accounting conclusions with respect to the variable interest model.

Our audit procedures included, among others, evaluating whether Covanta is the primary beneficiary of Covanta Green, which was determined to be a variable interest entity. We read and evaluated the key elements of all arrangements between Covanta and the entities involved in the transaction and evaluated the underlying legal and governance documents to determine whether Covanta has a controlling financial interest in Covanta Green. We made inquiries of management, obtained an understanding of and evaluated the business purpose of Covanta Green and the activities that most significantly impact the economic performance of the entity. For example, we evaluated how decisions about the most significant activities are made and the party or parties that make them, including evaluating whether Covanta's service agreement with the Facility resulted in Covanta's power to direct the activities that most significantly impact performance or the obligation to absorb expected losses.

Income Taxes - Uncertain Tax Positions

Description of the Matter

As discussed in Note 9 of the consolidated financial statements, the Company has recorded a liability of $40 million related to uncertain tax positions as of December 31, 2019. The Company conducts business in the US, various foreign countries and numerous states and is therefore subject to US federal and state income taxes, as well as income taxes of multiple foreign jurisdictions. Due to the multinational and multistate operations of the Company, changes in global, including US federal and state, income tax laws and regulations result in complexity in the accounting for and monitoring of income taxes including the provision for uncertain tax positions.

Auditing management's identification and measurement of uncertain tax positions involved complex analysis and audit judgment related to the evaluation of the income tax consequences of significant business transactions, including legal entity rationalization and restructurings, and changes in income tax law and regulations in various jurisdictions, which is often subject to interpretation.

How We Addressed the Matter in Our Audit

We tested the controls over the Company's process to account for uncertain tax positions, including management's review of the related tax technical analyses. For example, we tested controls over management's identification and assessment of changes to tax laws and significant transactions, which may result in uncertain tax positions.

We performed audit procedures, among others, to evaluate the Company's assumptions and underlying data used to develop its uncertain tax positions and related unrecognized income tax benefit amounts by jurisdiction. We obtained an understanding of the Company's legal structure through our review of organizational charts and related legal documents. We further considered the income tax consequences of significant transactions, including internal restructurings, and assessed management's interpretation of those changes under the relevant jurisdiction's tax law. Due to the complexity of tax law, we involved our income tax professionals to assess the Company's interpretation of and compliance with tax laws in these jurisdictions, as well as to identify tax law changes. In certain circumstances, we involved our income tax professionals to evaluate the technical merits of the Company's tax positions, including assessing the Company's correspondence with the relevant tax authorities and evaluating income tax opinions or other third-party advice obtained by the Company. We also evaluated the Company's income tax disclosures included in Note 9 to the consolidated financial statements in relation to these matters.

Impairment Evaluation of Goodwill - CES Reporting Unit

Description of the Matter

As discussed in Note 1 of the consolidated financial statements, goodwill is not amortized but rather is tested for impairment at least annually at the reporting unit level. The Company's goodwill is assigned to its reporting units as of the initial acquisition date. In 2019, the Company performed a quantitative goodwill impairment test on its CES reporting unit, which had goodwill of $46 million as of December 31, 2019. The Company's quantitative goodwill impairment test compares the fair value of the reporting unit to the reporting unit's carrying value.

Auditing management's goodwill impairment test is highly judgmental due to the subjectivity in determining the fair value of the reporting unit. Significant assumptions include future cash flow projections and the discount rate applied to those cash flows, the long-term terminal growth rate, and market proxies. These assumptions are highly subjective and involved significant judgment.

How We Addressed the Matter in Our Audit

We tested the controls over the Company's goodwill impairment process, including management's review of significant assumptions used in the fair value analysis.

Our audit procedures included, among others, assessing the suitability and application of the valuation methodologies and evaluating the significant assumptions and underlying data used by the Company in its analysis. For example, we compared the significant assumptions used by management to current industry and economic trends, the Company's business model and other relevant factors. We tested the projected financial information used in the analysis and evaluated the consistency and appropriateness of the discount rates and long-term terminal growth rates used in the assessment. We also tested the market approach by evaluating the market multiple proxies in management's analysis. We involved a valuation specialist to assist us in assessing the valuation methodologies and testing the significant assumptions used in the fair value models. We also performed sensitivity analyses of significant assumptions to evaluate the changes in fair value of the reporting unit resulting from changes in these assumptions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2002.

Iselin, New Jersey
February 25, 2020

ATTACHMENT J-2
FINANCING, DESIGN, CONSTRUCTION, AND STARTUP DOCUMENTS

Covanta Bristol, Inc. is wholly owned and operated by Covanta Holding Corporation. As described in Section 4 (Covanta's Biomedical Waste Program) of the Project Narrative (Attachment A), Covanta is experienced with implementing this type of project. Estimated capital costs and operating expenses associated with the BMW project are summarized below. Additional information related to the financial capability of Covanta to implement the new BMW project is addressed in Attachment J-3.

BMW Project OPERATING EXPENSES	
Year 1	
Local Host Fee	
Profiled Waste Operators	
Profiled Waste QAQC Manager	
Fuel - Fork trucks	
Parts, Contracting, Major Overhaul, Chemicals/Reagents	
Contingency	
TOTAL OPERATING EXPENSES	**$941,248**

BMW Project CAPITAL COSTS	
EQUIPMENT	**TOTAL PRICE EX WORKS**
Two (2) Truck Bays	
Relocation of Gas Lines	
Tipping floor wall extension	
YARD JOCKEY TRUCK	
PAVING OF TRAILER DROP LOT	
AFS to the Charging hoppers	
Controls	
Upper floor modifications Crane Pulpit	
Engineering- Covanta	
Engineering - Outside	
Mechanical installation	
Electrical Installation	
MISC First Aid stations, lighting, safety	
TOTAL CAPITAL COSTS	**$4,080,000**

ATTACHMENT J-3
ON-GOING OPERATIONS DOCUMENTS

Covanta Bristol, Inc. is wholly owned and operated by Covanta Holding Corporation. Covanta Bristol, Inc. has the financial capacity to properly operate the project as evidenced by the Form 10K for the year ended December 31, 2019 of its indirect parent Covanta Holding Corporation. Attached in the following pages are the relevant portions of the 2019 10K filing, which describes available free cash and loan availability.

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 For the fiscal year ended December 31, 2019**

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 1-06732

COVANTA HOLDING CORPORATION

(Exact name of registrant as specified in its charter)

Delaware			**95-6021257**
(State or Other Jurisdiction of Incorporation or Organization)			*(I.R.S. Employer Identification Number)*
445 South Street	**Morristown**	**NJ**	**07960**
(Address of Principal Executive Office)			*(Zip Code)*

Registrant's telephone number, including area code: (862) 345-5000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A common stock	CVA	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer	Accelerated filer	Non-accelerated filer	Smaller reporting company	Emerging growth company
☑	o	o	☐	☐

(Do not check if a smaller reporting company)

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

As of June 30, 2019, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was $2.1 billion. The aggregate market value was computed by using the closing price of the common stock as of that date on the New York Stock Exchange. (For purposes of calculating this amount only, all directors and executive officers of the registrant have been treated as affiliates.)

Class	Outstanding at February 14, 2020
Common Stock, $0.10 par value	131,430,105

Documents Incorporated By Reference:

Part of Form 10-K of Covanta Holding Corporation	Documents Incorporated by Reference
Part III	Portions of the Proxy Statement to be filed with the Securities and Exchange Commission in connection with the 2020 Annual Meeting of Stockholders.

LIQUIDITY AND CAPITAL RESOURCES

Our principal sources of liquidity are our unrestricted cash and cash equivalents, cash flow generated from our ongoing operations, and unutilized capacity under our Revolving Credit Facility, which we believe will allow us to meet our liquidity needs. Our business is capital intensive and our ability to successfully implement our strategy is, in part, dependent on the continued availability of capital on desirable terms. For additional information regarding our credit facilities and other debt, see *Item 8. Financial Statements And Supplementary Date - Note 15. Consolidated Debt.*

We expect to utilize a combination of cash flows from operations, borrowings under our Revolving Credit Facility, and other financing sources, as necessary, to fund growth investments in our business.

In 2020, we expect to generate net cash from operating activities which alone may not meet all of our cash requirements including funding capital expenditures to maintain our existing assets and paying our ongoing dividends to shareholders. We would utilize our Revolving Credit Facility to cover any shortfall. See *Results of Operations - Business Outlook* above for discussion of the factors impacting our 2020 business outlook.

We generally intend to refinance our debt instruments prior to maturity with like-kind financing in the bank and/or debt capital markets in order to maintain a capital structure comprised primarily of long-term debt, which we believe appropriately matches the long-term nature of our assets and contracts.

The loan documentation governing the Credit Facilities contains various affirmative and negative covenants, as well as financial maintenance covenants (financial ratios), that limit our ability to engage in certain types of transactions. We were in compliance with all of the covenants under the Credit Facilities as of December 31, 2019. Further, we do not anticipate our existing debt covenants to restrict our ability to meet future liquidity needs.

As of December 31, 2019, Covanta Energy had $1.3 billion in senior secured credit facilities consisting of a $900 million revolving credit facility (the “Revolving Credit Facility”) and a $400 million term loan (the “Term Loan”) both expiring August 2023 (collectively referred to as the "Credit Facilities"). As of December 31, 2019, our potential sources of near-term liquidity included (in millions):

	As of December 31, 2019
Cash	$ 37
Unutilized capacity under the Revolving Credit Facility	489
Total cash and unutilized capacity under the Revolving Credit Facility	$ 526

In addition, as of December 31, 2019, we had restricted cash of $26 million, of which $2 million was designated for future payment of project debt principal. Restricted funds held in trust are primarily amounts received and held by third-party trustees relating to certain projects we own. We generally do not control these accounts and these funds may be used only for specified purposes. For additional information on restricted funds held in trust, see *Item 8. Financial Statements And Supplementary Data — Note 1. Organization and Summary of Significant Accounting Policies - Restricted Funds Held in Trust.*

Our primary future cash requirements will be to fund capital expenditures to maintain our existing businesses, service our debt, invest in the growth of our business, and return capital to our shareholders. We believe that our liquidity position and ongoing cash flow from operations will be sufficient to finance these requirements.

The following summarizes our key financing activities completed during the year ended December 31, 2019:

- In December 2019, we entered into an agreement whereby we will regularly sell certain receivables on a revolving basis to third-party financial institutions (the “Purchasers”) up to an aggregate purchase limit of $100 million (the “Receivables Purchase Agreement or “RPA”). Transfers under the RPA meet the requirements to be accounted for as sales in accordance with the *Transfers and Servicing* topic of FASB Accounting Standards Codification. We receive a discounted purchase price for each receivable sold under the RPA and will continue to service and administer the subject receivables.
- In August 2019, we entered into a loan agreement with the Pennsylvania Economic Development Financing Authority under which they agreed to issue $50 million in aggregate principal amount of tax-exempt Solid Waste Disposal Bonds for the purpose of funding qualified capital expenditures at certain of our facilities in Pennsylvania and paying related costs of issuance.

- To reduce our exposure to fluctuations in cash flows due to changes in variable interest rates paid on our direct borrowings under the Credit Facilities, during the year ended December 31, 2019, we entered into pay-fixed, receive-variable swap agreements on $150 million notional amount of our variable rate debt under the Credit Facilities.

Share Repurchases and Dividends

For additional information on share repurchases see *Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities* and *Item 8. Financial Statements And Supplementary Data — Note 5. Equity and Earnings Per Share ("EPS").*

Sources and Uses of Cash Flow

Year Ended December 31, 2019 vs. Year Ended December 31, 2018

Net cash provided by operating activities for the year ended December 31, 2019 decreased by $12 million from the prior year period primarily attributable to the payment of our accrued expenses relating to the settlement of the Durham York matter as discussed in *Item 8. Financial Statements — Note 17. Commitments and Contingencies* and the prepayment of interest due in the first quarter of 2020, offset by the proceeds from the sale of a portion of our accounts receivable as discussed in *Item 8. Financial Statements — Note 10. Accounts Receivable Securitization.*

Net cash used in investing activities for the year ended December 31, 2019 increased by $6 million from the prior year period.

Net cash used in investing activities for the year ended December 31, 2019 of $145 million primarily consisted of the following:

- $158 million for property, plant and equipment, including $115 million for maintenance capital expenditures and $41 million for organic growth; offset by
- $22 million cash received upon the sale of a portion of our interests in the construction phase Rookery EfW facility to our joint venture partner GIG.

Net cash used in investing activities for the year ended December 31, 2018 of $139 million primarily consisted of the following:

- $206 million for property, plant and equipment, including $143 million for maintenance capital expenditures and $59 million for organic growth; and
- $46 million for the acquisition of the Palm Beach Resource Recovery Corporation; offset by
- $98 million cash received upon the sale of a portion of our Dublin EfW facility to our joint venture partner GIG.

For additional information on the above acquisitions and dispositions refer to *Item 8. Financial Statements — Note 3. New Business and Asset Management* and *Note 4. Dispositions and Assets Held for Sale.*

Net cash used in financing activities for the year ended December 31, 2019 decreased by $67 million from the prior year period.

Net cash used in financing activities for the year ended December 31, 2019 of $122 million primarily consisted of the following:

- $134 million of dividends paid to shareholders; and
- $29 million of net repayments on our Revolving Credit Facility; and
- $18 million of repayments of project debt; offset by
- $50 million of proceeds from tax-exempt bonds; and
- $30 million of proceeds from equipment financing arrangements.

Net cash used in financing activities for the year ended December 31, 2018 of $189 million primarily consisted of the following:

- $233 million of net repayments on our Revolving Credit Facility;
- $134 million dividends paid to shareholders; and
- $23 million of repayments of project debt; partially funded by
- Approximately $200 million of net proceeds from the refinancing of Covanta Energy's previous $200 million Term Loan with a new $400 million Term Loan; and
- $30 million of proceeds from the issuance of tax-exempt bonds.

For additional information on the above financing transactions refer to *Item 8. Financial Statements — Note 15. Consolidated Debt.* For a discussion of the sources and uses of cash flow for the years ended December 31, 2018 and 2017 please refer to *Part II- Item 7. Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2018.*

Supplementary Financial Information — Free Cash Flow (Non-GAAP Discussion)

To supplement our results prepared in accordance with GAAP, we use the measure of Free Cash Flow which is a non-GAAP measure as defined by the SEC. This non-GAAP financial measure is not intended as a substitute and should not be considered in isolation from measures of liquidity prepared in accordance with GAAP. In addition, our use of Free Cash Flow may be different from similarly identified non-GAAP measures used by other companies, limiting its usefulness for comparison purposes. The presentation of Free Cash Flow is intended to enhance the usefulness of our financial information by providing a measure which management internally uses to assess and evaluate the overall performance of its business and those of possible acquisition candidates, and highlight trends in the overall business.

We use the non-GAAP financial measures of Free Cash Flow as criteria of liquidity and performance-based components of employee compensation. Free Cash Flow is defined as cash flow provided by operating activities, less maintenance capital expenditures, which are capital expenditures primarily to maintain our existing facilities. We use Free Cash Flow as a measure of liquidity to determine amounts we can reinvest in our core businesses, such as amounts available to make acquisitions, invest in construction of new projects, make principal payments on debt, or return capital to our shareholders through dividends and/or stock repurchases. For additional discussion related to management's use of non-GAAP measures, see *Results of Operations — Supplementary Financial Information — Adjusted EBITDA (Non-GAAP Discussion)* above.

In order to provide a meaningful basis for comparison, we are providing information with respect to our Free Cash Flow for the years ended December 31, 2019 and 2018, reconciled for each such period to cash flow provided by operating activities, which we believe to be the most directly comparable measure under GAAP.

The following is a reconciliation of Net cash provided by operating activities to Free Cash Flow (in millions):

	Year Ended December 31,	
	2019	**2018**
Net cash provided by operating activities	$ 226	$ 238
Add: Changes in restricted funds - operating [(a)]	20	4
Less: Maintenance capital expenditures [(b)]	(106)	(142)
Free Cash Flow	$ 140	$ 100

(a) Adjustment for the impact of the adoption of ASU 2016-18 effective January 1, 2018. As a result of adoption, the statement of cash flows explains the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, changes in restricted funds are eliminated in arriving at net cash, cash equivalents and restricted funds provided by operating activities.

(b) Purchases of property, plant and equipment are also referred to as capital expenditures. Capital expenditures that primarily maintain existing facilities are classified as maintenance capital expenditures.

The following table provides the components of total purchases of property, plant and equipment (in millions):

	Year Ended December 31,	
	2019	2018
Maintenance capital expenditures	$ (106)	$ (142)
Net maintenance capital expenditures paid but incurred in prior periods	(9)	(1)
Capital expenditures associated with construction of Dublin EfW facility	—	(22)
Capital expenditures associated with organic growth initiatives	(22)	(24)
Capital expenditures associated with the New York City MTS contract	(19)	(13)
Total capital expenditures associated with growth investments [(c)]	(41)	(59)
Capital expenditures associated with property insurance events	(2)	(4)
Total purchases of property, plant and equipment	$ (158)	$ (206)

(c) Total growth investments represents investments in growth opportunities, including organic growth initiatives, technology, business development, and other similar expenditures.

Capital expenditures associated with growth investments	(41)	(59)
UK business development projects	(3)	(5)
Investment in equity affiliate	(14)	(16)
Asset and business acquisitions, net of cash acquired	2	(50)
Total growth investments	(56)	(130)

Available Sources of Liquidity

Cash and Cash Equivalents

Cash and cash equivalents include all cash balances and highly liquid investments having maturities of three months or less from the date of purchase. These short-term investments are stated at cost, which approximates fair value. Balances held by our international subsidiaries are not generally available for near-term liquidity in our domestic operations.

	As of December 31,	
	2019	2018
	(in millions)	
Domestic	$ 17	$ 19
International	20	39
Total Cash and Cash Equivalents	$ 37	$ 58

Credit Facilities

As of December 31, 2019, Covanta Energy's senior secured credit facilities consist of a $900 million revolving credit facility (the "Revolving Credit Facility") and a $385 million term loan (the "Term Loan") both expiring 2023 (collectively referred to as the "Credit Facilities"). For a detailed description of the terms of the Credit Facilities, see *Item 8. Financial Statements And Supplementary Data — Note 15. Consolidated Debt.*

Consolidated Debt

The face value of our consolidated debt is as follows (in millions):

	As of December 31,	
	2019	2018
Corporate Debt:		
Revolving credit facility	$ 183	$ 212
Term loan due	385	395
Senior notes	1,200	1,200
Tax-exempt bonds	544	494
Equipment financing arrangements	85	59
Finance leases[1]	6	5
Total corporate debt (including current portion)	$ 2,403	$ 2,365
Project Debt:		
Domestic project debt - service fee facilities	$ 47	$ 58
Domestic project debt - tip fee facilities	—	3
Union County EfW facility finance lease	84	89
Total project debt (including current portion)	131	150
Total Debt Outstanding	$ 2,534	$ 2,515

[1]Excludes Union County EfW Facility finance lease which is presented within project debt in our consolidated balance sheets.

For a detailed description of the terms of the debt instruments noted in the table above, see *Item 8. Financial Statements And Supplementary Data — Note 15. Consolidated Debt.* The loan documentation governing the Credit Facilities contains various affirmative and negative covenants, as well as financial maintenance covenants, that limit our ability to engage in certain types of transactions.

Contractual Obligations

The following table summarizes our gross contractual obligations including project debt, leases and other obligations as of December 31, 2019.

		Payments Due by Period			
(In millions)	**Total**	**2020**	**2021 and 2022**	**2023 and 2024**	**2025 and Beyond**
Project debt [1]	$ 47	$ 2	$ 4	$ 4	$ 37
Long-term debt [1]	2,312	10	20	973	1,309
Equipment financing arrangements [1]	85	7	14	15	49
Finance leases[2]	90	7	14	15	54
Uncertainty in income tax obligations [3]	40	1	1	15	23
Interest payments	1,285	139	274	217	655
Operating leases	68	8	15	12	33
Retirement plan obligations [4]	2	—	—	1	1
Total obligations	$ 3,929	$ 174	$ 342	$ 1,252	$ 2,161

(1) For a detailed description of the terms of our debt instruments, see *Item 8. Financial Statements And Supplementary Data — Note 15. Consolidated Debt.*

(2) For a detailed description of the terms of our debt instruments, see *Item 8. Financial Statements And Supplementary Data — Note 16. Leases.*

(3) Accounting for uncertainty in income tax obligations is based upon the expected date of settlement taking into account all of our administrative rights including possible litigation.

(4) Retirement plan obligations are based on actuarial estimates for our non-qualified pension plan obligations and post-retirement plan obligations only as of December 31, 2019.

Other Commitments

Other commitments as of December 31, 2019 were as follows (in millions):

Letters of credit issued under the Revolving Credit Facility	$	228
Letters of credit - other		40
Surety bonds		137
Total other commitments — net	$	405

We have issued or are party to performance guarantees and related contractual obligations undertaken mainly pursuant to agreements to construct and/or operate certain energy-from-waste facilities. To date, we have not incurred material liabilities under our guarantees.

For additional information on other commitments, see *Item 8. Financial Statements And Supplementary Data — Note 17. Commitments and Contingencies - Other Matters.*

Other Factors Affecting Liquidity

Our capital structure includes obligations with various maturity dates. Depending upon market conditions and general business requirements at the time we refinance these obligations, our choice of refinancing structure could materially increase or decrease our annual cash interest expense in future periods.

A substantial rise in the price of power may require us to post additional collateral, in the form of cash or letters of credit, to support hedging arrangements entered into under our energy risk management program. Such collateral posting requirements have been immaterial to date. We only enter into hedging transactions related to physical power generation, therefore we expect that any increase in obligations to hedge counterparties resulting from a rise in power prices would effectively be offset by corresponding increases in physical power sales, and as such we believe that any resulting collateral requirements would not have a material effect on our financial condition.

Insurance Coverage

We periodically review our insurance programs to ensure that our coverage is appropriate for the risks associated with our business. We have obtained insurance for our employees, assets and operations that provide coverage for what we believe are probable maximum losses, subject to self-insured retentions, policy limits and premium costs which we believe to be appropriate. However, the insurance obtained does not cover us for all possible losses, and coverage available in the market may change over time.

Off-Balance Sheet Arrangements

We have investments that are accounted for under the equity method and therefore we do not consolidate the financial information of those companies.

Supplemental Information on Unconsolidated Non-Recourse Project Debt

Below is a summary of our proportion of non-recourse project debt held by unconsolidated equity investments as of December 31, 2019 (in millions):

	Total Project Debt	Percentage Ownership	Proportionate Unconsolidated Project Debt	Project Stage
Dublin EfW (Ireland) [1]	$ 447	50%	$ 224	Operational
Earls Gate (UK) [2]	31	25%	8	Under construction
Rookery (UK) [3]	43	40%	17	Under construction
Zhao County EfW (China) [4]	—	26%	—	Under construction
Total	$ 521		$ 249	

(1) We have a 50% indirect ownership of Dublin EfW, through our 50/50 joint venture with GIG, Covanta Europe Assets Ltd.

(2) We have a 25% indirect ownership of Earls Gate, through our 50/50 joint venture with GIG, Covanta Green Jersey Assets Ltd., which owns 50% of Earls Gate. The total estimated project cost is £210 million ($277 million), £147 million ($194 million) is financed through non-recourse project-based debt.

(3) We have a 40% indirect ownership of Rookery through our 50/50 joint venture with GIG, Covanta Green UK Ltd. The total estimated project cost is £457 million ($603 million), £310 million ($409 million) is financed through non-recourse project-based debt.

(4) We have a 26% interest in Zhao County through our venture with Longking Energy Development Co. Ltd. The total estimated project cost is RMB 650 million ($93 million), RMB 455 million ($65 million) is financed through non-recourse project debt.

For additional information on our unconsolidated equity investments see *Item 8. Financial Statements And Supplementary Data — Note 3. New Business and Asset Management* and *Note 11. Equity Method Investments.*

DISCUSSION OF CRITICAL ACCOUNTING POLICIES AND ESTIMATES

In preparing our consolidated financial statements in accordance with GAAP, we are required to use judgment in making estimates and assumptions that affect the amounts reported in our consolidated financial statements and related notes. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. These estimates form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Many of our critical accounting policies are subject to significant judgments and uncertainties that could potentially result in materially different results under different conditions and assumptions. Future events rarely develop exactly as forecast, and the best estimates routinely require adjustment.

Policy	Judgments and estimates	Effect if actual results differ from assumptions
Revenue and Expense Recognition The Company recognizes revenue in accordance with the ASC 606, Revenue from Contracts with Customers. The core principle of ASC 606 is that an entity will recognize revenue at an amount that reflects the consideration to which the entity expects to be entitled in exchange for transferring goods or services to a customer. Revenue is recognized by applying the five steps described below: Step 1: Identify the contract(s) with a customer. Step 2: Identify the performance obligations in the contract. Step 3: Determine the transaction price. Step 4: Allocate the transaction price to the performance obligation in the contract. Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation.	When a performance obligation is satisfied over time, the output or input method may be used to determine an appropriate method of progress. The Output method recognizes revenue on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract. The input method utilizes the entities inputs towards the satisfaction of a performance obligation (for example, costs incurred). Both methods may include estimates within the transaction price, contracts with customers may contain different types of variable consideration that we estimate through probability based approaches. There are certain constraining factors relating to Variable consideration that may preclude us from booking revenue in order to prevent over estimating revenue. Determining whether a factor is constrained requires judgment.	There is a degree of uncertainty that exists in determining the variable component of consideration in a contract. A significant revenue reversal is not expected but amounts recognized for revenue are adjusted based on actual performance obligations delivered which will cause fluctuations in operating income recognized. Further estimates may change on long term construction contracts based on better information becoming available which can cause fluctuations in revenue and operating income.
Purchase Accounting We allocate acquisition purchase prices to identified tangible and intangible assets acquired and liabilities assumed based on their estimated fair values at the dates of acquisition, with any residual amounts allocated to goodwill. The fair value estimates used reflect our best estimates for the highest and best use by market participants.	These estimates are subject to uncertainties and contingencies. For example, we use the discounted cash flow method to estimate the value of many of our assets, which entails developing projections of future cash flows.	If the cash flows from the acquired net assets differ significantly from our estimates, the amounts recorded could be subject to impairments. Furthermore, to the extent we change our initial estimates of the remaining useful life of the assets or liabilities, future depreciation and amortization expense could be impacted.

Policy	Judgments and estimates	Effect if actual results differ from assumptions
Equity Method Investments We evaluate our equity investments to determine if we have the ability to exercise significant influence over the entity but not control, generally assumed to be 20%-50% ownership. Under the equity method, original investments are recorded at cost and adjusted by our share of earnings or losses of these companies. Distributions received from the investee reduce our carrying value of the investment and are recorded in the consolidated statements of cash flows using the cumulative earnings approach.	The determination and degree of our ability to control, or exert significant influence over, an entity involves the use of judgment. The consolidation guidance requires qualitative and quantitative analysis to determine whether our involvement, through holding interests directly or indirectly in an entity, would give us the ability to exercise significant influence over an entity but not control.	Subsequent changes to the interests of the entity through equity ownership levels or otherwise may require a reassessment of our conclusions of whether we have the ability to exercise significant influence over the entity but not control. If upon a reassessment event we were determined to control the entities, consolidation would be required. Summarized financial information of equity method investments is included in *Item 8. Financial Statements And Supplementary Data — Note 11. Equity Method Investments.*
Long-lived Assets Our long-lived assets include property, plant and equipment; waste, service and energy contracts; amortizable intangible assets; and other assets. We evaluate the recoverability of the long-lived assets when there are indicators of possible impairment. Such indicators may include a decline in market, new regulation, recurring or expected operating losses, change in business strategy, or other changes that would impact the use or benefit received from the assets. The assessment is performed by grouping the long-lived assets at the lowest level of identifiable cash flows for the related assets or group of assets (such as the facility level). Initially the carrying value of the asset or asset group is compared to its undiscounted expected future cash flows. If the carrying value is in excess of the undiscounted cash flows, the carrying value is then compared to the fair value. Fair value may be estimated based upon the discounted cash flows, market or replacement cost methods based on the assumptions of a third-party market participant. Impairment is recognized if the fair value is less than the carrying value.	Our judgments regarding the existence of impairment indicators are based on regulatory factors, market conditions, anticipated cash flows and operational performance of our assets. When determining the fair value of our asset groupings for impairment assessments, we make assumptions regarding their fair values which are dependent on estimates of future cash flows, discount rates, and other factors.	Future events or changes in circumstances may occur that require another assessment in future periods based on cash flows and discount rates in effect at that time.

Policy	Judgments and estimates	Effect if actual results differ from assumptions
Goodwill As of December 31, 2019, we had $321 million of goodwill recorded in our one reportable segment, which is comprised of two reporting units, North America EfW and CES (see *Item 8. Financial Statements And Supplementary Data — Note 14. Intangible Assets and Goodwill)*. We evaluate our goodwill annually and when an event occurs or circumstances change that could reduce the fair value of a reporting unit below its carrying value. We have the option to perform our initial assessment over the possible impairment of goodwill either qualitatively or quantitatively. Under the qualitative assessment, consideration is given to both external factors (including macroeconomic and industry conditions) and our own internal factors (including internal costs, recent financial performance, management, business strategy, customers, and stock price).	Our judgments regarding the existence of impairment indicators are based on regulatory factors, market conditions, anticipated cash flows and operational performance of our assets. When determining the fair value of our reporting units for impairment assessments, we make assumptions regarding the fair value which is dependent on estimates of future cash flows, discount rates, and other factors.	We performed the required annual impairment review of our recorded goodwill for our two reporting units as of October 1, 2019. We performed a qualitative assessment for our North America EfW reporting unit and concluded that the fair value of this reporting unit continued to substantially exceed the carrying value as of the testing date. For our CES reporting unit, we bypassed the qualitative assessment and proceeded directly to the first step of the goodwill impairment test. We determined an estimate of the fair value of this reporting unit by combining both the income and market approaches. The market approach was based on current trading multiples of EBITDA for companies operating in businesses similar to our CES reporting unit. In performing the test under the income approach, we utilized a discount rate of 10% and a long-term terminal growth rate of 2.5% beyond our planning period. The assumptions used in evaluating goodwill for impairment are subject to change and are tracked against historical performance. Based on the results of the test performed, we determined that the estimated fair value of the CES reporting unit exceeded the carrying value by 5%; therefore, we did not record a goodwill impairment charge for the year ended December 31, 2019. Given the narrow margin, we performed a sensitivity analysis on the above assumptions which determined that, while holding the market approach constant, an increase in the discount rate of 80 bps to 10.8% or a decrease in the long-term growth rate of 120 bps to 1.3% would result in impairment. While we believe the assumptions used were reasonable and commensurate with the views of a market participant, changes in key assumptions, including increasing the discount rate, lowering forecasts for revenue, operating margin or lowering the long-term growth rate for our CES reporting unit, could result in a future impairment. The goodwill recorded for our CES reporting unit totaled $46 million as of December 31, 2019, and resulted from previously acquired materials processing facilities that are specially designed to process, treat, recycle, and dispose of solid and liquid wastes.

Policy	Judgments and estimates	Effect if actual results differ from assumptions
Deferred Tax Assets As described in *Item 8. Financial Statements And Supplementary Data — Note 9. Income Taxes*, we have recorded a deferred tax asset related to our NOLs. The NOLs will expire in various amounts beginning on December 31, 2033 through December 31, 2037, if not used. Deferred tax assets are reduced by a valuation allowance if, based on available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized.	We estimated a valuation allowance of approximately $65 million to offset our deferred tax assets related to NOLs and our tax credit carryforward balance. The amount was estimated based upon future taxable income arising from (a) the reversal of temporary differences during the period the NOLs are available and (b) future operating income expected, to the extent it is reasonably predictable. Judgment is involved in assessing whether a valuation allowance is required on our deferred tax assets.	To the extent our estimation of the reversal of temporary differences and operating income generated differs from actual results, we could be required to adjust the carrying amount of the deferred tax assets.

RECENT ACCOUNTING PRONOUNCEMENTS

See *Item 8. Financial Statements And Supplementary Data — Note 2. Recent Accounting Pronouncements* for a summary of new accounting pronouncements.

Item 7A. *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK*

In the normal course of business, our subsidiaries are party to financial instruments that are subject to market risks arising from changes in commodity prices, interest rates, foreign currency exchange rates, and derivative instruments. Our use of derivative instruments is very limited and we do not enter into derivative instruments for trading purposes. The following analysis provides quantitative information regarding our exposure to financial instruments with market risks. We use a sensitivity model to evaluate the fair value or cash flows of financial instruments with exposure to market risk that assumes instantaneous, parallel shifts in exchange rates and interest rate yield curves. There are certain limitations inherent in the sensitivity analysis presented, primarily due to the assumption that exchange rates change in a parallel manner and that interest rates change instantaneously. In addition, the fair value estimates presented herein are based on pertinent information available to us as of December 31, 2019. Further information is included in *Item 8. Financial Statements And Supplementary Data — Note 12. Financial Instruments* and *Note 13. Derivative Instruments*.

Commodity Price Risk

Waste Price Risk

We have some protection against fluctuations in fuel (municipal waste) price risk because approximately 76% of our municipal waste is provided under multi-year contracts where we are paid for our fuel at fixed rates. At our tip fee energy-from-waste facilities, certain amounts of waste processing capacity are not subject to long-term contracts and, therefore, we are partially exposed to the risk of market fluctuations in the waste disposal fees we may charge for fuel. At service fee facilities, waste disposal fees generally increase annually due to annual contract price escalations intended to reflect changes in our costs. Declines in waste disposal fees at our energy-from-waste facilities are mitigated through internalizing waste disposal by utilizing our network of transfer stations located throughout the northeast United States and by increasing our profiled waste volumes, which we can sell at a higher price than municipal solid waste.

We expect that multi-year contracts for waste supply at facilities we own or lease will continue to be available on acceptable terms in the marketplace, at least for a substantial portion of facility capacity, as municipalities continue to value long-term committed and sustainable waste disposal capacity. We also expect that an increasing portion of system capacity will be contracted on a shorter-term basis, and so we will have more frequent exposure to waste market risk.

Energy Price Risk

In contrast to our waste disposal agreements, as a result of structural and regulatory changes in the energy markets over time, we expect that multi-year contracts for energy sales will generally be less available than in the past, thereby increasing our exposure to energy market price volatility upon expiration. As our historic energy contracts have expired and our service fee contracts have transitioned to tip fee contracts, our exposure to market energy prices has increased. We expect this trend to continue. In order to mitigate our exposure to near-term (one to three years) revenue fluctuations in energy markets, we enter into hedging arrangements and we expect to do so in the future.

Recycled Metals Price Risk

We recover and sell ferrous and non-ferrous metals, with pricing linked to related commodity indices. Therefore, our metals revenue is completely exposed to market price fluctuations. A 10% change in the current market rates would impact recycled metals revenue by approximately $5 million and $4 million for ferrous and non-ferrous, respectively.

Interest Rate Risk

Our financial market risk results primarily from changes in interest rates. We reduce our exposure to changes in interest rates by entering into interest rate swap contracts. We utilize the interest rate swaps to convert variable rate debt to fixed rate debt. Our interest rate hedge instruments are designated as cash flow hedges. For further details about our interest rate swaps, see *Item 8. Financial Statements And Supplementary Data — Note 13. Derivative Instruments*.

Borrowings under the Credit Facilities bear interest, at our option, at either a base rate or a Eurodollar rate plus an applicable margin determined by a pricing grid based on Covanta Energy's leverage ratio. Base rate is defined as the higher of (i) the Federal Funds Effective Rate plus 0.50%, (ii) the rate the administrative agent announces from time to time as it's per annum "prime rate" or (iii) the London Interbank Offered Rate ("LIBOR"), or a comparable or successor rate, plus 1.00%. Base rate borrowings under the Revolving Credit Facility bear interest at the base rate plus an applicable margin ranging from 0.50% to 1.50%. Eurodollar borrowings under the Revolving Credit Facility bear interest at LIBOR plus an applicable margin ranging from 1.75% to 2.75%.

Base rate borrowings under the Term Loan bear interest at the base rate plus an applicable margin ranging from 0.75% to 1.00%. Eurodollar borrowings under the Term Loan bear interest at LIBOR plus an applicable margin ranging from 1.75% to 2.00%.For details as to the various election options under the Credit Facility, see *Item 8. Financial Statements And Supplementary Data — Note 15. Consolidated Debt*.

As of December 31, 2019, the outstanding balances under Covanta Energy's Term Loan and the Revolving Credit Facilities were $384 million and $183 million, respectively. A hypothetical increase of 1% in the underlying December 31, 2019 market interest rates would result in a potential reduction to twelve-month future pre-tax earnings and cash provided by operations of approximately $4 million, based on balances outstanding as of December 31, 2019.

London Interbank Offered Rate ("LIBOR") Transition

The use of the London Interbank Offered Rate ("LIBOR") is expected to be phased out by the end of 2021. LIBOR is currently used as a reference rate for certain of our debt, including our Credit Facilities. Generally, our contracts include a transition clause in the event LIBOR is discontinued, as such, we do not expect the transition of LIBOR to have a material impact on our business. At this time, there is no definitive information regarding the future utilization of LIBOR or of any particular replacement rate; however, we will continue to monitor the efforts of various parties, including government agencies, seeking to identify an alternative rate to replace LIBOR.

Foreign Currency Exchange Rate Risk

We have operations and investments in various foreign markets, including Canada, Ireland, the UK, China and Italy. As and to the extent that we grow our international business, we expect to invest in foreign currencies to pay either for the construction costs of facilities that we develop or for the cost to acquire existing businesses or assets. Currency volatility in those markets, as well as the effectiveness of any currency hedging strategies we may implement, may impact both the amount we are required to invest in new projects as well as our financial returns on these projects and our reported results. See *Item 8. Financial Statements And Supplementary Data — Note 11. Equity Method Investments* for further discussion.

COVANTA HOLDING CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	For the Year Ended December 31,		
	2019	2018	2017
	(In millions, except per share amounts)		
OPERATING REVENUE:			
Waste and service revenue	$ 1,393	$ 1,327	$ 1,231
Energy revenue	329	343	334
Recycled metals revenue	86	95	82
Other operating revenue	62	103	105
Total operating revenue	1,870	1,868	1,752
OPERATING EXPENSE:			
Plant operating expense	1,371	1,321	1,271
Other operating expense, net	64	65	51
General and administrative expense	122	115	112
Depreciation and amortization expense	221	218	215
Impairment charges	2	86	2
Total operating expense	1,780	1,805	1,651
Operating income	90	63	101
OTHER (EXPENSE) INCOME			
Interest expense	(143)	(145)	(147)
Net gain (loss) on sale of business and investments	49	217	(6)
Loss on extinguishment of debt	—	(15)	(84)
Other income (expense), net	1	(3)	1
Total other (expense) income	(93)	54	(236)
(Loss) income before income tax benefit and equity in net income from unconsolidated investments	(3)	117	(135)
Income tax benefit	7	29	191
Equity in net income from unconsolidated investments	6	6	1
NET INCOME	$ 10	$ 152	$ 57
Weighted Average Common Shares Outstanding:			
Basic	131	130	130
Diluted	133	132	131
Earnings Per Share:			
Basic	$ 0.07	$ 1.17	$ 0.44
Diluted	$ 0.07	$ 1.15	$ 0.44
Cash Dividend Declared Per Share:	$ 1.00	$ 1.00	$ 1.00

The accompanying notes are an integral part of the consolidated financial statements.

COVANTA HOLDING CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	For the Year Ended December 31,		
	2019	2018	2017
	(In millions)		
Net income	$ 10	$ 152	$ 57
Foreign currency translation	(5)	(2)	19
Net (loss) gain on intra-entity foreign currency transactions	(2)	3	(2)
Net unrealized gain (loss) on derivative instruments, net of tax expense of $6, $2 and $0, respectively	4	21	(10)
Other comprehensive (loss) income	(3)	22	7
Comprehensive income	$ 7	$ 174	$ 64

The accompanying notes are an integral part of the consolidated financial statements.

COVANTA HOLDING CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
	2019	2018
	(In millions, except per share amounts)	
ASSETS		
Current:		
Cash and cash equivalents	$ 37	$ 58
Restricted funds held in trust	18	39
Receivables (less allowances of $9 and $8, respectively)	240	338
Prepaid expenses and other current assets	105	64
Total Current Assets	400	499
Property, plant and equipment, net	2,451	2,514
Restricted funds held in trust	8	8
Intangible assets, net	258	279
Goodwill	321	321
Other assets	277	222
Total Assets	$ 3,715	$ 3,843
LIABILITIES AND EQUITY		
Current:		
Current portion of long-term debt	$ 17	$ 15
Current portion of project debt	8	19
Accounts payable	36	76
Accrued expenses and other current liabilities	292	333
Total Current Liabilities	353	443
Long-term debt	2,366	2,327
Project debt	125	133
Deferred income taxes	372	378
Other liabilities	123	75
Total Liabilities	3,339	3,356
Commitments and Contingencies (Note 17)		
Equity:		
Preferred stock ($0.10 par value; authorized 10 shares; none issued and outstanding)	—	—
Common stock ($0.10 par value; authorized 250 shares; issued 136 shares, outstanding 131 shares)	14	14
Additional paid-in capital	857	841
Accumulated other comprehensive loss	(35)	(33)
Accumulated deficit	(460)	(334)
Treasury stock, at par	—	(1)
Total Equity	376	487
Total Liabilities and Equity	$ 3,715	$ 3,843

The accompanying notes are an integral part of the consolidated financial statements.

COVANTA HOLDING CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOW

	For the Year Ended December 31,		
	2019	2018	2017
	(In millions)		
OPERATING ACTIVITIES:			
Net income	$ 10	$ 152	$ 57
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	221	218	215
Amortization of long-term debt deferred financing costs	5	5	7
(Gain) loss on sale of business	(49)	(217)	6
Impairment charges	2	86	2
Loss on extinguishment of debt	—	15	84
Provision for doubtful accounts	2	2	9
Stock-based compensation expense	25	24	18
Equity in net income from unconsolidated investments	(6)	(6)	(1)
Deferred income taxes	(9)	(31)	(193)
Dividends from unconsolidated investments	9	13	2
Other, net	3	(10)	(13)
Change in working capital, net of effects of acquisitions:			
Receivables	94	7	(27)
Prepaid and other current assets	(5)	(3)	5
Accounts payable and accrued expenses	(77)	(16)	66
Changes in noncurrent assets and liabilities, net	1	(1)	5
Net cash provided by operating activities	226	238	242
INVESTING ACTIVITIES:			
Purchase of property, plant and equipment	(158)	(206)	(277)
Acquisition of businesses, net of cash acquired	2	(50)	(16)
Proceeds from asset sales	27	128	4
Property insurance proceeds	—	18	8
Payment of indemnification claim related to sale of asset	—	(7)	—
Investment in equity affiliate	(14)	(16)	—
Other, net	(2)	(6)	(8)
Net cash used in investing activities	(145)	(139)	(289)

COVANTA HOLDING CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOW – (Continued)

	For the Year Ended December 31,		
	2019	2018	2017
	(In millions)		
FINANCING ACTIVITIES:			
Proceeds from borrowings on long-term debt	80	1,165	400
Proceeds from borrowings on revolving credit facility	536	740	952
Proceeds from insurance premium financing	29	25	24
Proceeds from borrowings on Dublin project financing	—	—	643
Payment related to Dublin interest rate swap	—	—	(17)
Payments on the Dublin Convertible Preferred	—	—	(132)
Payments on long-term debt	(16)	(944)	(420)
Payments on revolving credit facility	(565)	(973)	(850)
Payments on project debt	(18)	(23)	(382)
Payments of deferred financing costs	(1)	(16)	(21)
Payment of Dublin financing costs	—	—	(19)
Cash dividends paid to stockholders'	(133)	(134)	(131)
Payment of insurance premium financing	(26)	(24)	(4)
Other, net	(8)	(5)	(3)
Net cash (used in) provided by financing activities	(122)	(189)	40
Effect of exchange rate changes on cash and cash equivalents	(1)	1	7
Net decrease in cash, cash equivalents and restricted cash	(42)	(89)	—
Cash, cash equivalents and restricted cash at beginning of period	105	194	194
Cash, cash equivalents and restricted cash at end of period	63	105	194
Less: cash, cash equivalents and restricted cash of assets held for sale at end of period	—	—	77
Cash, cash equivalents and restricted cash at end of period	$ 63	$ 105	$ 117
Reconciliation of cash, cash equivalents and restricted cash:			
Cash and cash equivalents	$ 37	$ 58	$ 46
Restricted funds held in trust- short term	18	39	43
Restricted funds held in trust- long term	8	8	28
Total cash, cash equivalents and restricted cash	$ 63	$ 105	$ 117
Cash Paid for Interest and Income Taxes:			
Interest	$ 152	$ 136	$ 149
Income taxes, net of refunds	$ 5	$ 2	$ —

The accompanying notes are an integral part of the consolidated financial statements.

ATTACHMENT J-5
AGREEMENTS BETWEEN PARTIES AND SERVICE AGREEMENTS AND CONTRACTS

Covanta is reviewing contracts with potential customers of BMW, which are dependent upon the completion this project. Covanta will provide contracts to the CT DEEP for review prior to acceptance of BMW. No new contracts are required for disposal of ash residue associated with the BMW project.

ATTACHMENT J-6
ORGANIZATION CHART

Covanta Bristol, Inc. is 100% wholly owned and operated by Covanta Holding Corporation. *See*, Operations & Management (O&M) Plan in Attachment K for a copy of the organization chart.

ATTACHMENT J-7
PLANNING AND ZONING APPROVAL

Letters of support for this project from the Mayor of the City of Bristol are included in Appendix E (City of Bristol Letters of Support) of the Project Narrative (Attachment A).

ATTACHMENT K

FACILITY PLAN

BMW Addendum to the Operations and Maintenance Plan
And Engineering Drawings

BIOMEDICAL WASTE ADDENDUM
TO THE
OPERATION AND MANAGEMENT PLAN

BIOMEDICAL WASTE OPERATIONS
COVANTA BRISTOL, INC.
170 ENTERPRISE DRIVE
BRISTOL, CT

PREPARED BY:
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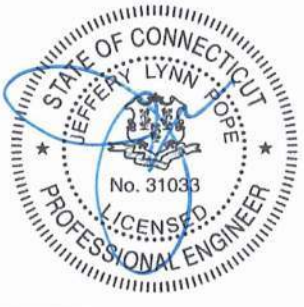
Covanta
Environmental Manager

REVIEWED BY:



Jeffery Pope, PE
Burns & McDonnell

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A. PURPOSE

This Biomedical Waste Addendum to the Operations and Management Plan (BMW Addendum) has been prepared to supplement the existing Operations and Management (O&M) Plan for the Covanta Bristol Inc. (Covanta) Bristol Resource Recovery Facility (Bristol Facility). This BMW Addendum address changes associated with the treatment and disposal of biomedical waste (BMW) at the Bristol Facility.

B. OPERATION

1. Types and Quantities of Waste

The Bristol Facility is currently permitted to receive and process 716 tons per day (TPD) of municipal solid waste (MSW) and special waste as authorized by the Connecticut Department of Energy and Environmental Protection (CT DEEP), for an annual limit of 261,340 tons. Special Waste Disposal Authorization 01701245-SWDA (SWDA) allows the Bristol Facility to accept and process no more than 57 TPD of special waste, averaged over the course of one week, and receive no greater than 114 tons of special waste on any given day.

Covanta will include BMW as part of the existing special waste processing limit. The ratio of 57 TPD special waste to 716 TPD of total waste represents a maximum feed ratio of 8% special waste, including BMW, to 92% authorized MSW.

Acceptable BMW

The following are examples of non-hazardous BMW streams accepted by the Bristol Facility:

- BMW that is untreated waste generated during the administration of medical care or the performance of medical research involving humans or animals;
- Infectious Waste;
- Pathological Waste; and
- Chemotherapy Waste.

Specific examples of acceptable BMW include, but are not limited to, used and unused sharps, blood and bodily fluids, microbiological waste, renal dialysis waste, surgical waste, pathological material, non-hazardous pharmaceutical waste commingled with sharps, and trace chemotherapy waste, which result from the administration of healthcare services.

Unacceptable BMW

The following BMW streams are not accepted by Covanta Bristol:

1. United States Environmental Protection Agency (USEPA) hazardous pharmaceutical waste;
2. Human fetal tissue;
3. Human remains;
4. Large amounts of free-flowing liquids;

5. Radioactive materials;
6. Bulk pathological waste;
7. Bulk chemotherapeutic waste; and
8. Formaldehyde, iodine, or other preservative agents.

2. Sources of Waste

Most BMW will come from BMW service providers who service large quantity generators of BMW such as hospitals. BMW service providers typically have a fleet of trucks for route-based collection of BMW where the BMW is then transported to permitted transfer stations, consolidated, and loaded onto transfer trailers for transportation to Covanta facilities. BMW from medical wholesalers and distributors, in the form of unused sharps, vaccines, and medical devices that are not fit for distribution into the supply chain, can be transported directly to the Bristol Facility. BMW from small quantity generators, including doctors, veterinarians, and dentists, along with BMW from post-consumer sources, is normally transported to a transfer station or consolidation site before being shipped to the Bristol Facility.

3. Daily Operations

A flow diagram which depicts the proposed receipt and processing of BMW at the Bristol Facility is shown on Drawing M-100 (Attachment 1). Depending upon availability, BMW drivers may be instructed to back up directly to one of the two loading docks to be located on the west side of the tipping floor building. In most cases, the driver will instead be sent to the designated BMW/Special Waste Truck Staging areas as shown on Drawing C-100 (Attachment 1). The driver will be directed to park the trailer in an open parking slot and unhook the full trailer from the tractor. The driver will then be directed to connect to an empty trailer and exit the facility. Trailers will be refrigerated units to ensure BMW is maintained in a non-putrescent state.

Covanta's staff will use a yard jockey truck to move full trailered loads from the staging area to the unloading docks as the docks become open. Empty trailers will also be moved out of the loading docks using the yard jockey truck and will be relocated to the truck staging area.

Trained staff with the proper personal protection equipment will perform the unloading of the trucks/trailered loads and loading of the Waste Feed System (WFS). As shown on Drawing M-100 (Attachment 1), shipments of BMW will be unloaded by forklift and staged near the WFS Tipping Floor Transfer conveyor, awaiting to be loaded. Shipments of BMW may also be stored in the future Waste Annex as shown on Drawing C-100 (Attachment 1).

Figures 1 through 9 below depict the movement of BMW through the Bristol Facility. Note, photos are for representation only and show similar equipment to that which will be used at the Bristol Facility. BMW that arrives in reusable totes will be removed from the truck/trailer, and then emptied from the tote into a 4-sided enclosed WFS Bin using the forklift (Figure 1). The 4-sided WFS Bins will be fabricated from ASTM A36 carbon steel that are seam welded and measure 60" x 60" x 72" high. The loaded WFS bin will then be staged or stored as described above. The empty totes will be loaded back into trucks/trailers for return to customer.

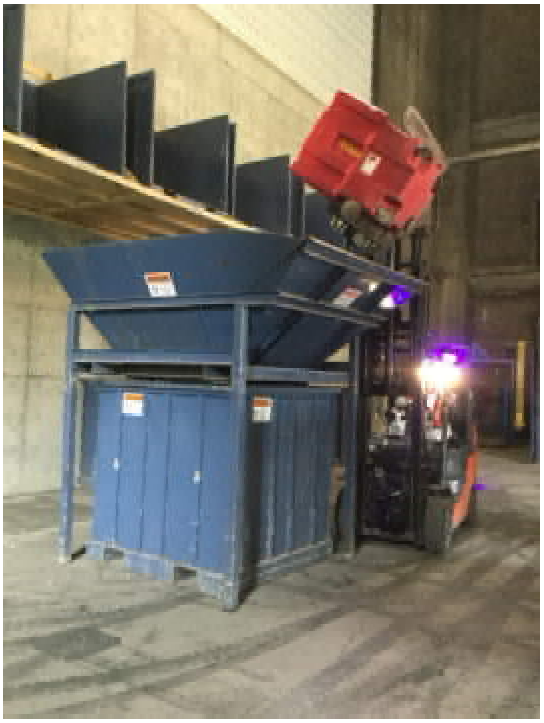


Figure 1 - Contents of the reusable totes dumped into the 4-sided fully enclosed WFS bin.

The unpalletized (non-reusable containers) BMW shipments will be manually unloaded from the trailer into 3-sided WFS Bins (Figures 2 and 3). The 3-sided bins will be fabricated from ASTM A36 carbon steel and measure 60" x 60" x 72" high. Forklifts will be used to move the WFS bins to the automated WFS or temporary storage in either the BMW/Special Waste Processing Area or in the future Waste Annex.

Figure 2 – Un-palleted boxed BMW is loaded into 3-sided WFS bins within trailer

Figure 3 - Example of 3-sided WFS bins

The future Waste Annex will be located to the south of the truck unloading docks along the west wall of the existing tipping floor building as shown in Drawing C-100 (Attachment 1). The Waste Annex will provide intermediate storage of BMW shipments in reusable totes, in palletized boxes, or waste loaded into the WFS bins. The future Waste Annex will contain a pallet storage system to allow multiple pallets of BMW to be properly stored. Figure 4 shows an example of a forklift storing pallets in a Waste Annex.

Figure 4 - Example of forklift loading in the Storage system in the Annex

After BMW has been removed from the trailer, the yard-jockey will relocate the empty trailer to the staging/drop area. The next full trailer of BMW material will be brought to the loading dock.

Covanta proposes to construct an automated, computer-controlled WFS to transfer BMW from the BMW/Special Waste Processing Area directly to the municipal waste combustor (MWC) units' waste feed chutes. The system will be designed to minimize potential worker contact with the waste material. This controlled process will have dedicated resources and trained personnel who process this waste. The figures below depict the waste feed system and show components of the BMW flow path within the Facility. Detailed drawings of the BMW WFS can be found in

Attachment 1. A floor plan of the BMW/Special Waste Processing Area is presented in Drawing No. M-200. Drawing M-201 is an elevation plan of the WFS.

The forklift will load the WFS bins from the BMW/Special Waste Processing area onto the WFS Tipping Floor Transfer conveyor, located at tipping floor grade. This conveyor will then load the WFS elevator (Figures 5 and 6).

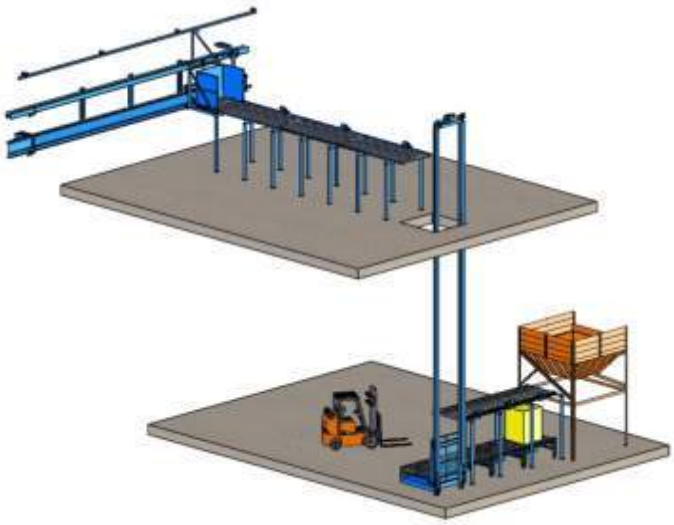


Figure 5 – Automated Waste Feed System

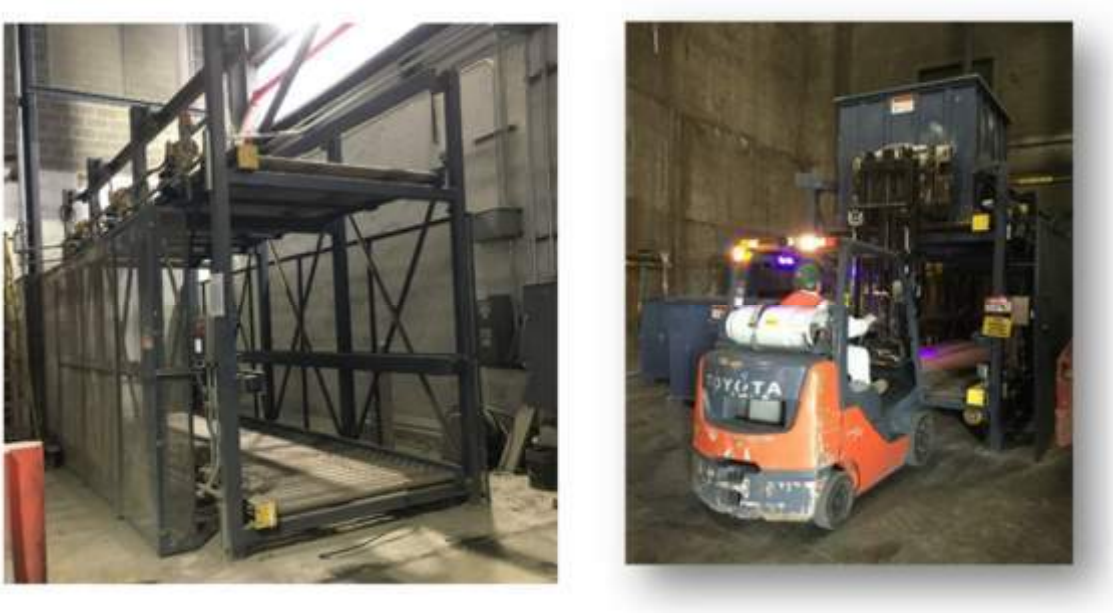


**Figure 6 – WFS conveyors at tipping floor grade elevation.
Example of forklift loading Tipping Floor Transfer conveyor.**

The elevator system will vertically lift the WFS bin from the tipping floor elevation to the charging floor elevation (Figure 7).

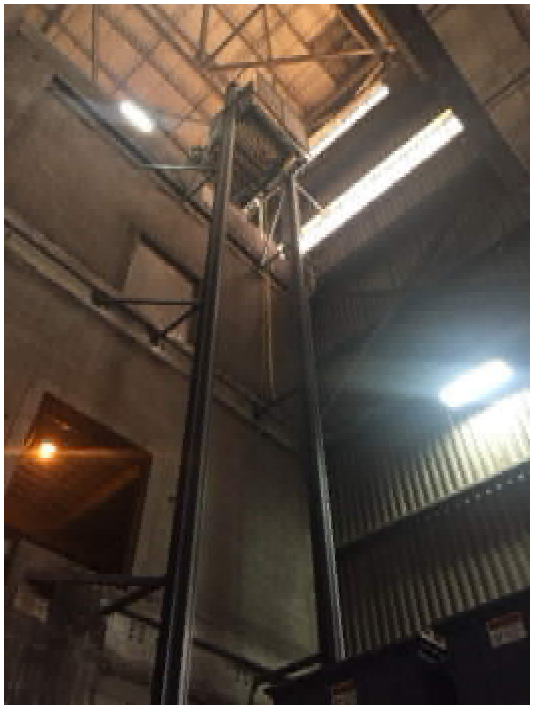


Figure 7 - WFS Elevator Unit to transport full & empty WFS bins

At the charging deck level, the elevator will feed onto the horizontal Charging Deck Transfer Conveyor (Figure 8). This elevated conveyor allows for sequenced shuttling of full and empty WFS bins back and forth as shown in Drawing M-100 (Attachment 1).

Figure 8 - WFS Charging Deck Transfer Conveyor to move full & empty WFS bins

A plan of the charging deck level is shown on Drawing No. M-202. The charging deck conveyor loads the WFS bin onto the WFS dumper conveyor which transports the WFS bin and drops the waste into the selected MWC feed chute (Figure 9).

Figure 9 - WFS Dumping mechanism feeding MWC feed chute

Once in the feed chute, the BMW will mix with MSW and feed by gravity down into the MWC furnace feed table that is integral to each MWC Unit. From the feed table, the waste will be hydraulically pushed into the combustion chamber.

The empty WFS bin will then return on these same conveyors and elevator back to the BMW/Special Waste Processing area and the cycle repeats.

4. Periodic Inspections

BMW will be incorporated into the established inspection program the Facility has for its existing operations. Trained staff at the Facility will perform thorough quality assurance/quality control (QA/QC) inspections on BMW shipments using a prescribed Covanta QA/QC inspection form. This form may be in a paper or an electronic format. The QA/QC inspection form is used to document that the proper paperwork is accompanying the load, including the Covanta BMW Load Certification document and Medical Waste Tracking form. The QA/QC inspection form is also used to document the condition of the load and any discrepancies identified.

Additionally, QA/QC inspectors will verify that BMW load meets Regulations of Connecticut State Agency (RCSA) Section 22a-209-15 (b) (4) for proper waste packaging, (7) for proper BMW labels, and (8) for proper Generator and Transporter information markings.

5. Procedures for Managing Unacceptable BMW

Covanta has implemented a QA/QC program for BMW customers to minimize the likelihood of unacceptable waste being received by the Facility (see paragraph B.9 for additional information). Each customer shipment must be accompanied by a Covanta BMW Load Certification certifying the deliver contains only BMW as defined with the Waste Disposal Agreement in affect with the customer, contains no Unacceptable Waste as defined in the Agreement, and is not subject to regulations as hazardous waste under RCRA.

Discrepancies identified during load inspections will be reported to the customer. Reports will identify the root causes of discrepancies and requisite corrective actions to prevent future issues. Discrepancies may trigger load rejections, customer suspensions and customer corrective action site audits in addition to those periodically conducted by Covanta.

6. Measuring Waste

Upon arriving at the Facility, each vehicle will be weighed at the scale house located just inside of the security gate. BMW waste vehicles will be scanned for radioactivity at the scale house. A scale record will include the source (name of the hauler or cartage firm), origin, date, time, and quantity (tons) of the BMW.

7. Storage

BMW will be stored in designated BMW storage locations such that is does not become mixed with other waste and is only accessible to authorized persons. BMW will be stored in enclosed trailers in the BMW truck staging areas, in bins located in the BMW Waste Processing Area within the tipping building, and in bins and boxes on pallets within the future Waste Annex adjacent to the tipping building. The estimated cubic yards of BMW storage in these 3 areas is as follows: Truck Trailers – 1,040 cubic yards, BMW Processing Area – 267 cubic yards, and Waste Annex – 56 cubic yards. The total BMW storage capacity is estimated at 1,363 cubic yards. A sign displaying the universal biohazard symbol will be posted in BMW storage areas.

BMW will not be stored at the Facility for longer than 72 hours which will allow it to be combusted throughout holiday weekends.

8. Process Capacity

The Facility is not requested any changes to its existing processing capacity or special waste processing capacity. Covanta proposes to include BMW as part of its existing special waste processing capacity.

The SWDA allows Covanta Bristol to accept and process no more than 57 TPD of special waste, averaged over the course of one week, and receive no greater than 114 tons of special waste on any given day. See paragraph B.1. for additional information.

9. Quality Assurance/Quality Control Program

Covanta's QA/QC program adheres to a rigorous and documented process. The process begins with a conference call with the prospective customer to gather information about the company,

its customers and their waste materials, packaging requirements, waste containers and other details.

Next, the prospective customer must complete a Material Characterization Form (MCF) for Covanta approval. This process informs a customer about supplemental requirements concerning source segregation and provides educational materials used at generator sites for waste segregation and packaging, as well as information about training and refresher course programs.

The next step in the process is an initial customer facility site visit by Covanta to review waste receiving, segregation, and repacking requirements and procedures. Any modifications that may be required to meet Covanta specifications, acceptable and unacceptable wastes and a service agreement would be discussed.

Before any BMW can be delivered to the Bristol Facility, all customers must execute a service agreement which includes added safeguards for compliance with our program by allowing Covanta to inspect any upstream customer facility that receives, processes or aggregates BMW to be delivered to a Covanta facility. After any required updates or follow-up visits are completed, all paperwork and the service agreement are submitted to Covanta for final approval.

Customer site audits are conducted by Covanta including a pre-approval audit, regularly scheduled recertification audits and a corrective action site audit, if required.

10. Recycling and Diversion Goals

Connecticut updated its 2006 Solid Waste Management Plan (SWMP) with the 2016 Comprehensive Materials Management Strategy (CMMS). The CMMS focuses primarily on recycling programs, waste conversion and diversion, and corporate stewardship. There are currently limited recycling and corporate materials stewardship options for management of BMW materials. While efforts are underway to holistically develop solutions which achieve these goals, the addition of BMW to the Facility provides a more sustainable solution to BMW management than is presently provided in Connecticut.

BMW generated in Connecticut has limited treatment and management options. Some BMW is treated by autoclaving resulting in a waste material requiring disposal. Other BMW is transported out-of-state for treatment and disposal. For example, BMW is transported to an incinerator in Maryland for proper treatment and disposal. This management solution requires trucks to drive approximately 600 miles roundtrip to transport the BMW from Connecticut to Maryland. The addition of BMW to Covanta's process provides a needed treatment and disposal outlet for BMW management in Connecticut, as well as a more sustainable option of transport as compared to trucking out-of-state.

C. MANAGEMENT

1. Organization Chart

An organization chart is included as Attachment 2.

In accordance with State of Connecticut regulations, all chief and shift operators are required to be certified by the Commissioner. Operators must satisfactorily complete an operator training course conducted by the Commissioner. There is no change to this requirement as a result of the BMW project.

2. Facility Operating Agreements

At this time, there are no subcontractors associated with the BMW project. If a subcontractor is use, Covanta will provide a copy of the facility operating agreement to CT DEEP for review and approval.

3. Operating Hours

There are no changes the operating hours of the Bristol Facility as a result of the BMW project. The Bristol Facility operates 24 hours per day, 7 days per week. Waste is normally received Monday through Saturday and combustion of the waste is conducted 24 hours per day, 7 days per week.

4. Communication Systems

There are no changes to the communication system used as a result of the BMW project. The existing communication system within the Facility will be used for the BMW receipt and processing operation. The system includes the use of plant-wide Gaitronics type paging system and two-way radios. A landline phone system is provided for offices and the control room.

D. PLANNING

A list of permits required to implement the proposed BMW project at the Bristol Facility includes:

1. A Permit for the Construction and Operation of a Solid Waste Facility to receive and process biomedical waste (BMW) by incineration with energy recovery at the Facility;
2. Modification of the current Permit to Operate (PTO) No. 01701072-PO for the Bristol Facility to approve changes to the site plan and the O&M Plan of the Facility;
3. Minor Modification of the Title V Operating Permit for the Facility; and
4. Local permits from the City of Bristol. Concurrently with the CT DEEP's review of the application, Covanta will coordinate a meeting with the City of Bristol to review local permits required for the project and initiate the permitting process.

E. RECORDKEEPING

All BMW deliveries to the Bristol Facility will be scheduled in advance. Upon arriving at the Facility, each vehicle will be weighed at the scale house located just inside of the security gate. A scale record will include the source (name of the hauler or cartage firm), origin, date, time, and quantity (tons) of the BMW. A Pre-Shipment Notification form provided with each individual delivery will also be signed as the certification of disposal/destruction of the waste. A signed copy of this form will be provided to the driver and another copy will be kept at the Facility for recordkeeping.

Each customer shipment must be accompanied by a Covanta BMW Load Certification document. On the Load Certification document, the customer certifies that the delivery accompanying the Certification contains only Biomedical Medical Waste, as defined in the Waste Disposal Agreement in effect with the customer, contains no Unacceptable Waste as defined in the Agreement and is not subject to regulations as hazardous waste under RCRA.

Additionally, Covanta will ensure that a Medical Waste Tracking form that meets RCSA 22a-209-15(h), Appendix I, accompanies the load. BMW deliveries will not be offloaded until all required shipment documents, including the Covanta BMW Load Certification, are signed and received at the Facility.

Trained staff at the Facility will perform thorough QA/QC inspections on BMW shipments using a prescribed Covanta QA/QC inspection form. This form may be in a paper or an electronic format. The QA/QC inspection form is used to ensure that the proper paperwork is accompanying the load, is used to document the condition of the load, and is used to document any discrepancies. Additionally, QA/QC inspectors will verify that BMW load meets RCSA Section 22a-209-15 (b) (4) for proper waste packaging, (7) for proper BMW labels, and (8) for proper Generator and Transporter information markings.

The existing system used for the collection and maintenance of information required for quarterly reporting to CT DEEP will continue to be used.

F. MAINTENANCE

Existing daily clean-up and maintenance procedures will be used at the Facility, including the BMW storage and processing areas. Existing contracts and agreements pertaining to maintenance of the Facility and equipment will be reviewed and will either be updated to include the BMW processing area and equipment or a new contract may be established. The BMW project will use existing roads at the Facility. Signs will be posted directing BMW traffic to the BMW staging areas.

G. ENVIRONMENTAL CONTROLS

1. Dust, Odor, and Vector Nuisance Control

The Facility will continue to employ the existing procedures and equipment used for the control of nuisances (e.g., dust, odors, and vectors) at the Facility. BMW will be received securely packaged and maintained in a non-putrescible state. As such, it is not anticipated the addition of BMW to the Facility's operations will contribute to nuisances. Trucks parked in staging areas will be kept locked until such time as they are relocated to the dock for unloading.

The Facility will maintain existing protocols for responding to complaints or requests received by the Facility.

2. Leaks and Spills

Vehicles used to transport BMW must have a spill kit which conforms with the requirements at RCSA 22a-209-15 e (8). The required content of the spill kit includes absorbent material, disinfectant, bags, seals and labels, protective apparel, a fire extinguisher, a high-intensity flashlight and a first-aid kit. A spill kit which meets the specifications of RCSA 22a-209-15 will also be located at the Bristol Facility on the west side of the process area. In addition to the spill kit, the Facility will maintain a storage unit to segregate tools only to be used in the BMW Process Area.

3. Truck Idling

The Facility will comply with the provisions of RCSA 22a-174-18(b)(3) with respect to vehicle idling times.

4. Inspections and Audits

The Facility conducts inspections and audits with respect to environmental and permit requirements as part of its existing operations. Additional procedures to conduct inspections and audits associated with BMW are discussed in this BMW Addendum.

H. TRAFFIC

The facility plan has been updated to show new traffic patterns proposed for the BMW project. See engineering drawing C-100 (Attachment 1). The BMW project will use existing roadways and driveways.

I. EQUIPMENT

The following equipment will be used with the BMW project:

- Forklift;
- 3-sided bins;
- 4-sided enclosed bins;
- Automated WFS; and
- Yard jockey truck.

Cut sheets, attached to the Application, provide a description of the fixed and mobile equipment proposed for use with the BMW project. Actual equipment selection may vary and will be determined during the detailed design of the BMW project. Additional information can be found on the engineering drawings found in Attachment 1.

Routine maintenance and inspection of equipment for the BMW project will be completed in accordance with Covanta's procedures.

J. FIRE CONTROL

The Bristol Facility has an established fire control system that covers the tipping building areas, as well as the outdoor areas. As part of the detailed design of the BMW project, the existing fire suppression system in the BMW Processing Area will be evaluated to determine if it is sufficient as-is or if modifications need to be made, as per the most current state, local and National Fire Protection Association codes. Additionally, during this phase of the design process, a fire suppression system for the proposed annex will be evaluated and designed to those same standards.

K. EMERGENCIES

1. Planned and Unplanned Outages

As required by its current PTO, the Bristol Facility has established provisions for the diversion of waste deliveries away from the Facility, as well as the transfer of waste out of the Facility during planned and unplanned outages. For planned outages, BMW shipment schedule will be revised, as necessary. For unplanned outages, BMW deliveries would first attempt to be rescheduled with customers. If the shipment cannot be rescheduled, the shipment can be diverted to alternate BMW processing facilities. Covanta has obtained a letter agreement to divert BMW shipments to its Huntsville, AL or Lake County FL Facilities. A copy of the Letter Agreement is provided in Attachment C. Agreements with other BMW processing facilities will be provided to the CT DEEP for review prior to use.

2. Emergency Events

The Bristol Facility is required under its current PTO to provide expeditious notification to the CT DEEP of emergency incidents or other significant disruptive occurrences. Covanta will continue to provide notifications with regards to the proposed BMW project.

The Bristol Facility has an established Facility Emergency Action Plan (EAP) that is used in the event of an emergency event such as fire, medical or explosion including, but not limited to, response procedures, coordination with local medical, police and fire protection. For the BMW project, the existing emergency response procedures will be used. Additionally, the EAP will be updated to include spill response procedure for BMW.

L. SAFETY

1. Safety Procedures and Training

Pursuant to RCSA 22a-209-4(b)(2)(B)(iv), the Bristol Facility has an established health and safety program meeting Occupational Safety and Health Administration (OSHA) standards for its existing operations, which includes safety procedures and training programs implemented at the Bristol Facility.

Operators of the Bristol Facility have been trained in accordance with the Municipal Waste Combustor Operator Training Program developed by the USEPA in support of improving the air pollution control practices at MWCs. The USEPA was required to develop a model state training and certification program for solid waste incinerator operators under Title 111 of Section 129 of the Clean Air Amendments of 1990. In accordance with State of Connecticut regulations, all chief and shift operators are required to be certified by the Commissioner. Operators must satisfactorily complete an operator training course conducted by the Commissioner.

Given the potentially infectious characteristics of some BMW, it is important that facility operators be properly trained and qualified prior to any combustion of BMW at the Facility. Although the federal Hospital, Medical and Infectious Waste Incinerator (HMIWI) rules do not apply to the MWC units co-fired combustors at the Facility, Covanta asserts that the training requirements of 40 CFR 60.53c(c) for HMIWI are appropriate for inclusion in a training program for combusting BMW at any of its facilities.

At least 90 days prior to any combustion of BMW at the Bristol Facility, Covanta will submit to CT DEEP for approval, a comprehensive training program that covers the following topics required by 40 CFR 60.53c(c) that includes, at a minimum, the following provisions:

(a) 24 hours of training with facility staff on the following subjects:
  (i) Environmental concerns, including pathogen destruction and types of emissions;
  (ii) Basic combustion principles, including products of combustion;
  (iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;
  (iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance;
(vi) Methods to monitor pollutants and equipment calibration procedures;
(vii) Inspection and maintenance of the waste handling equipment, combustion equipment, air pollution control devices, and continuous emission monitoring systems;
(viii) Actions to correct malfunctions or conditions that may lead to malfunction;
(ix) Ash characteristics and handling procedures;
(x) Applicable Federal, State, and local regulations;
(xi) Work safety procedures;
(xii) Pre-startup inspections; and
(xiii) Recordkeeping requirements.

(b) Distribution of reference material to the attendees covering the course topics.

(c) An examination designed and administered by the instructor given to trainees to ensure they have been properly trained.

Changes resulting from this BMW project will be reviewed by the Bristol Facility during its Facility Change Notification review process, and then will be added to the Facility's training programs, including new mobile equipment operations and automated WFS operations.

The training program which includes the Best Management Practices (BMPs) for the handling, storage and co-firing of BMW at the Facility will be submitted to the agency 90 days prior to the first firing of BMW in the MWC units. The training program and BMPs will be kept onsite and made available for inspection upon request.

2. Signs

The traffic route and staging areas for BMW trucks is separate from the traffic route for employees and visitors to the Facility as shown in Drawing C-100 (Attachment 1). Signs will be posted directing BMW traffic to the BMW staging area.

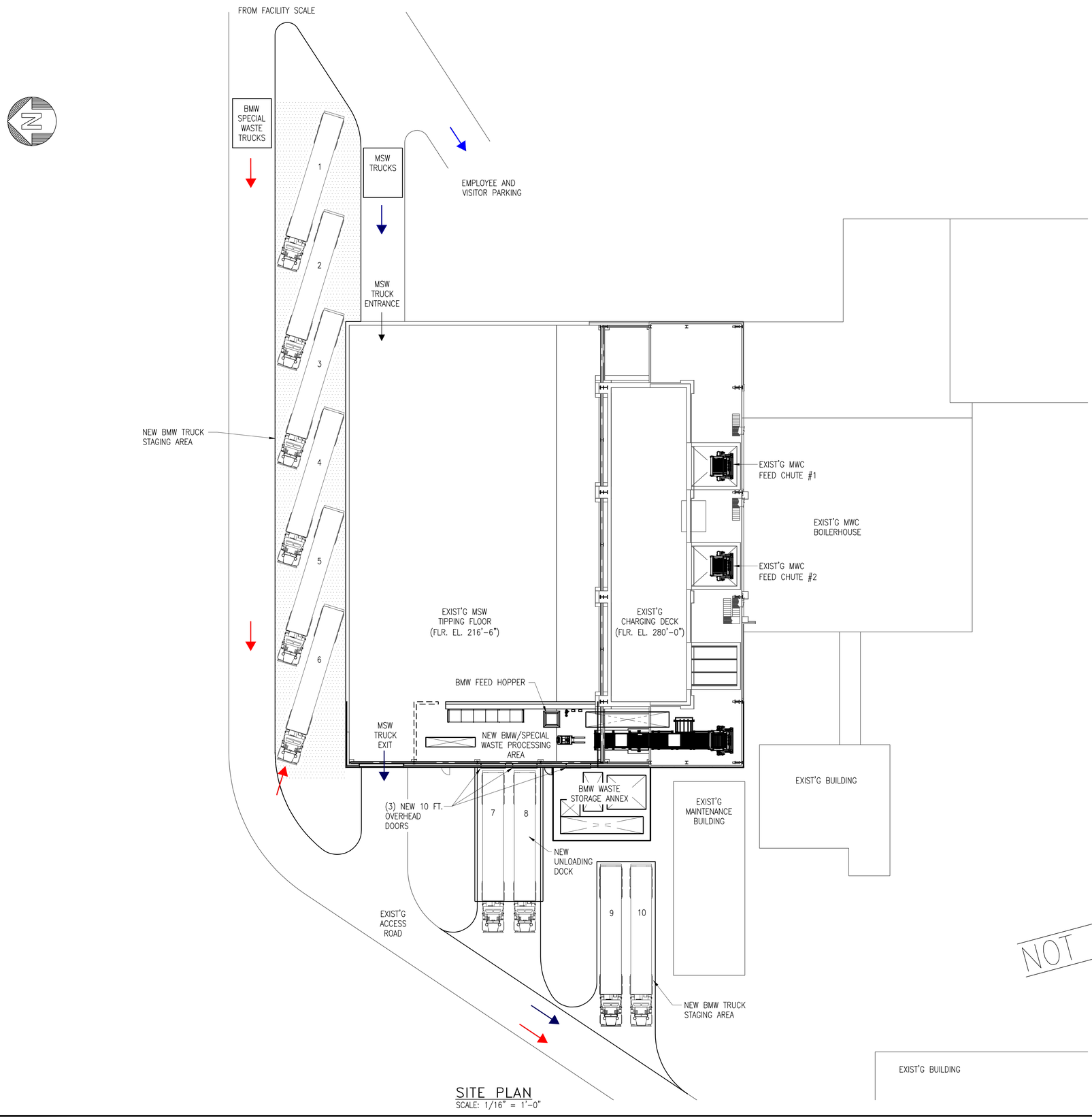
M. FINANCIAL ASSURANCE INSTRUMENT

The Bristol Facility maintains a financial assurance instrument and provides annual updates for its current operations. This financial assurance instrument will be updated and submitted to CT DEEP within 180 days after solid waste and air quality final approvals for BMW have been obtained.

ATTACHMENT 1

ENGINEERING DRAWINGS

C-100 – Site Plan
M-100 – Process Flow Diagram
M-200 – Tipping Floor and Refuse Pit Bldg. Floor Plan – West
M-201 – Tipping Floor and Refuse Pit Bldg. Sections
M-202 – Tipping Floor and Refuse Pit Bldg. Floor Plan – East



SITE PLAN
SCALE: 1/16" = 1'-0"

NOT FOR CONSTRUCTION
PRELIMINARY

0 20 40 60 80 FEET
SCALE: 1"=20'-0"

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COVANTA BRISTOL
BRISTOL, CT

BMW HANDLING SYSTEM

No.	Submittal / Revision	App'd	By	Date
PD	CT DEEP PERMIT REVIEW	AJ	BG	01/29/21
PC	CT DEEP PERMIT REVIEW	AJ	BG	01/22/21
PB	ISSUED FOR REVIEW	AJ	BG	01/19/21
PA	CT DEEP PERMIT REVIEW	AJ	BG	01/15/21

SITE PLAN

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AJ/BG	BG	AJ
Date:	Project No:	Scale:
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Drawing No.:
C-100

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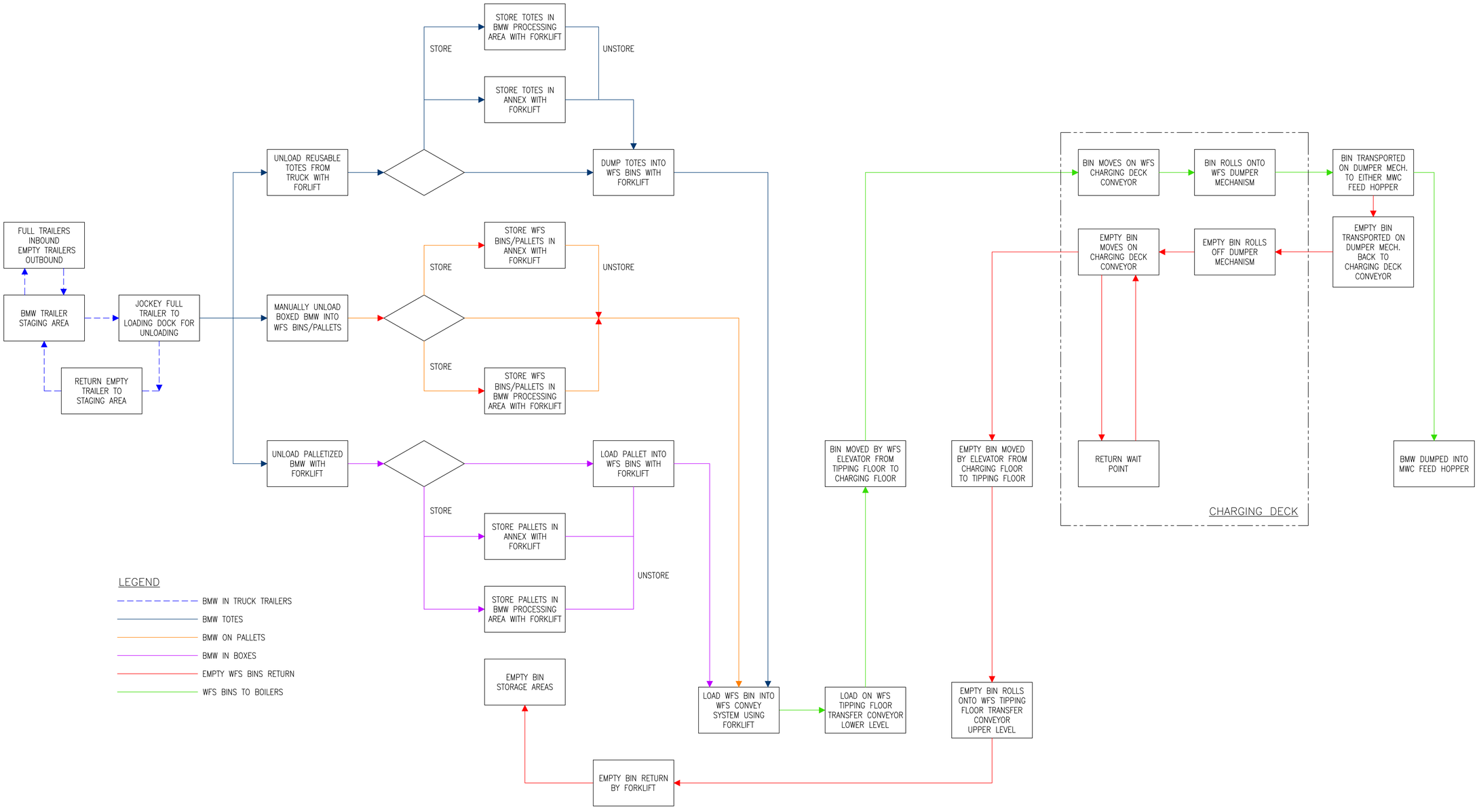

NOT FOR CONSTRUCTION

PRELIMINARY

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COVANTA BRISTOL
BRISTOL, CT

BMW HANDLING SYSTEM

No.	Submittal / Revision	App'd	By	Date
PC	CT DEEP PERMIT REVIEW	AJ	BG	01/29/21
PB	CT DEEP PERMIT REVIEW	AJ	BG	01/22/21
PA	CT DEEP PERMIT REVIEW	AJ	BG	01/15/21

PROCESS FLOW DIAGRAM

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Drawing No.:

M-100

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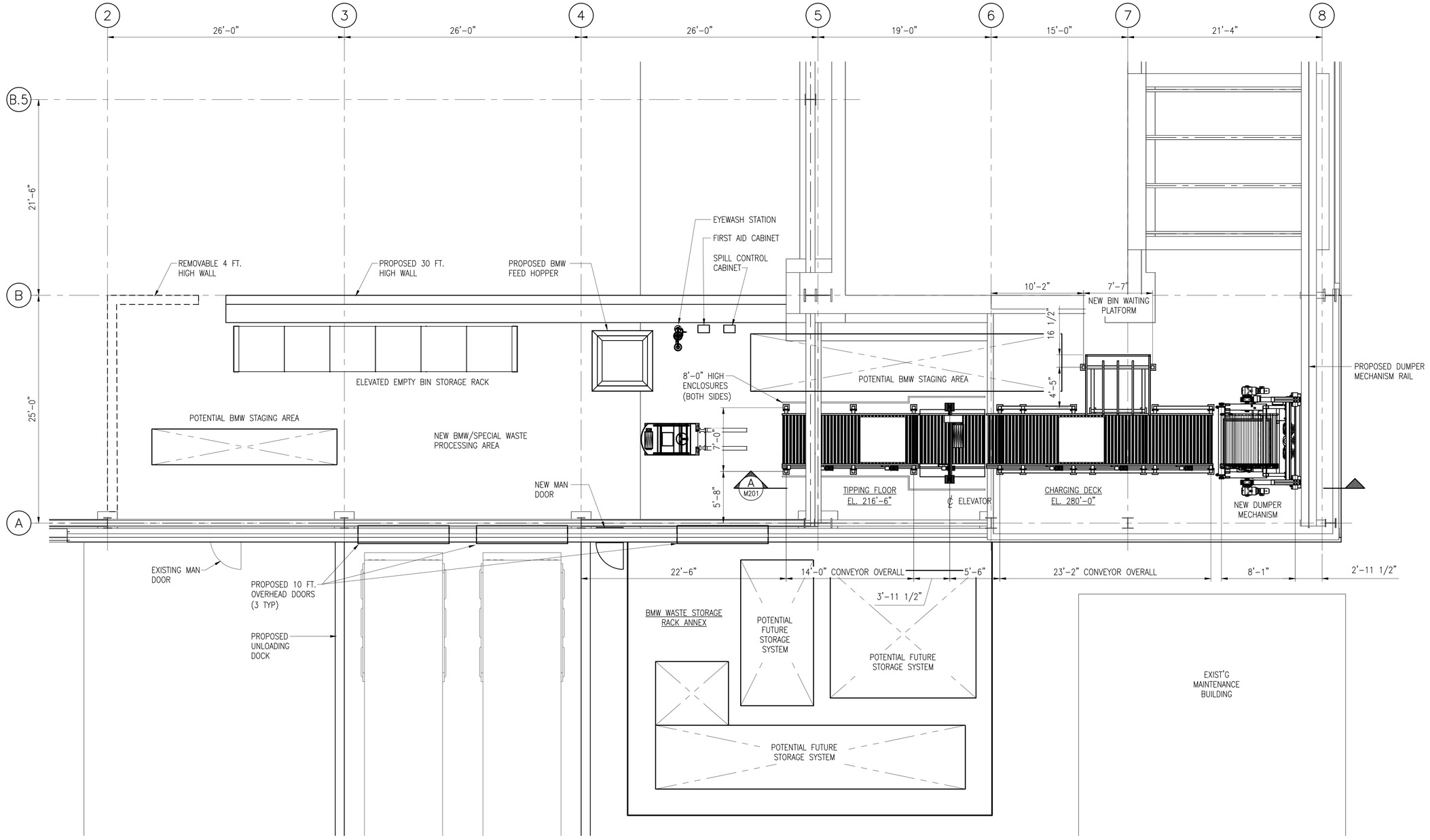

TIPPING FLOOR AND REFUSE PIT BLDG.
SCALE: 3/16" = 1'-0"

NOT FOR CONSTRUCTION
PRELIMINARY

0 5 10 15 20 FEET
SCALE: 3/16" = 1'-0"

CHA CANADA
80 King Street, Suite 404, St. Catharines, ON, L2R 7G1
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STATE OF CONNECTICUT
JOSEPH M. PROVENCHER
No. 27363
LICENSED PROFESSIONAL ENGINEER

COVANTA BRISTOL
BRISTOL, CT

BMW HANDLING SYSTEM

No.	Submittal / Revision	App'd	By	Date
PE	CT DEEP PERMIT REVIEW	AJ	BG	01/29/21
PD	CT DEEP PERMIT REVIEW	AJ	BG	01/20/21
PC	CT DEEP PERMIT REVIEW	AJ	BG	01/15/21
PB	ISSUED FOR REVIEW	AJ	BG	01/13/21
PA	ISSUED FOR REVIEW	AJ	BG	01/11/21

TIPPING FLOOR AND REFUSE PIT BLDG. FLOOR PLAN - WEST

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AJ/BG	BG	AJ
Date:	Project No:	Scale:
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Drawing No.:
M-200

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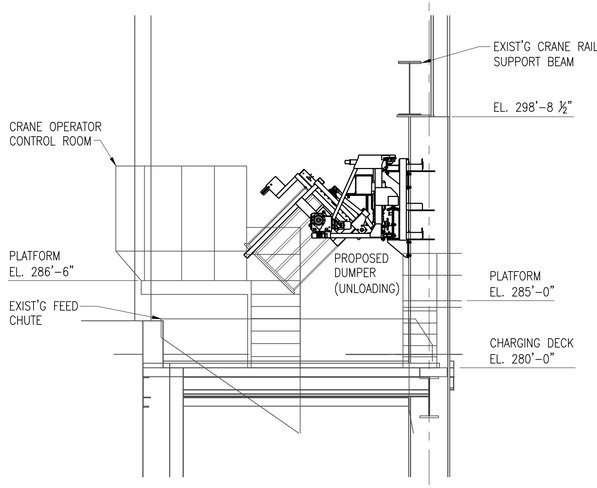

SECTION AT STOKER FEED CHUTE

SECTION B / M202

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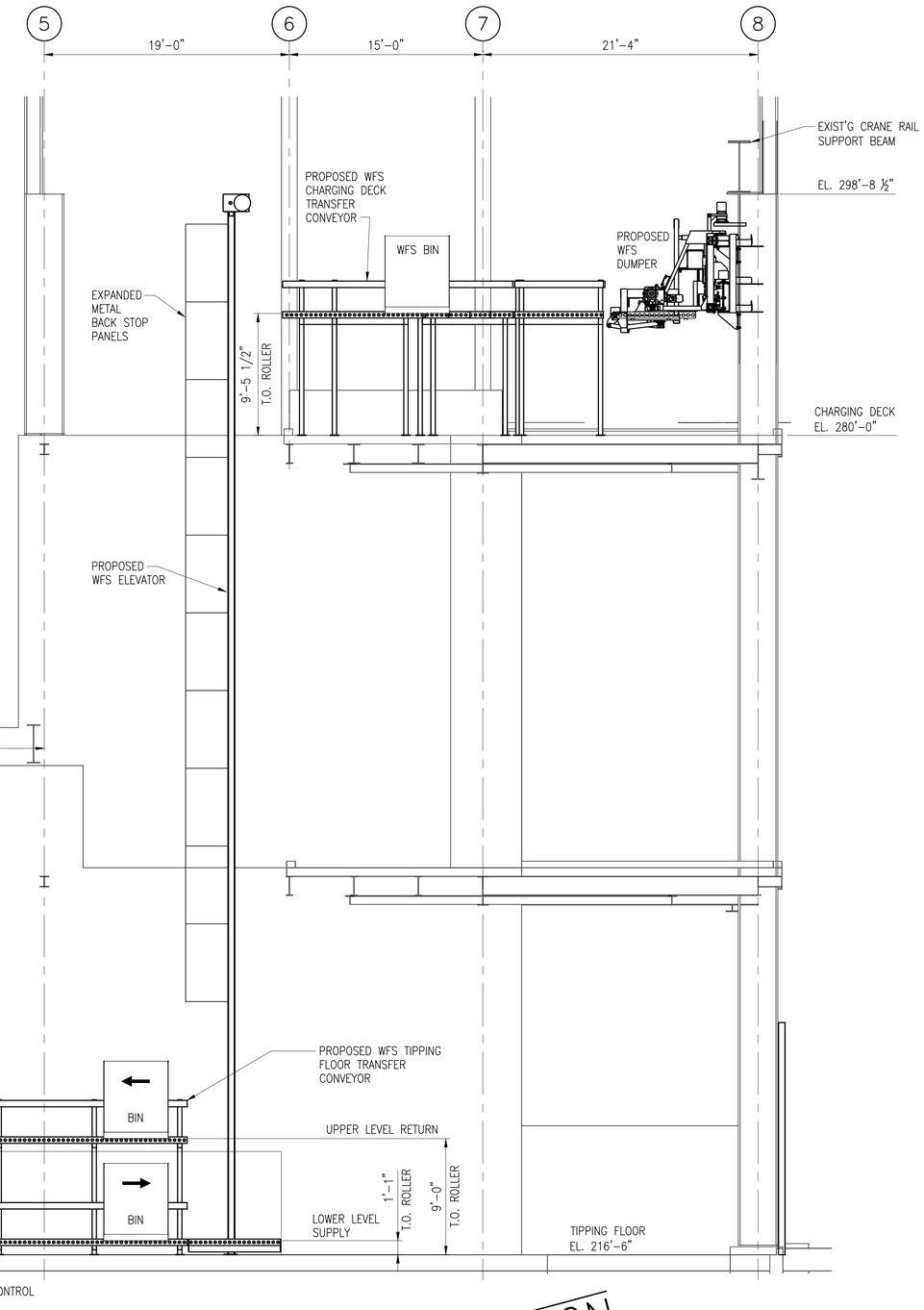

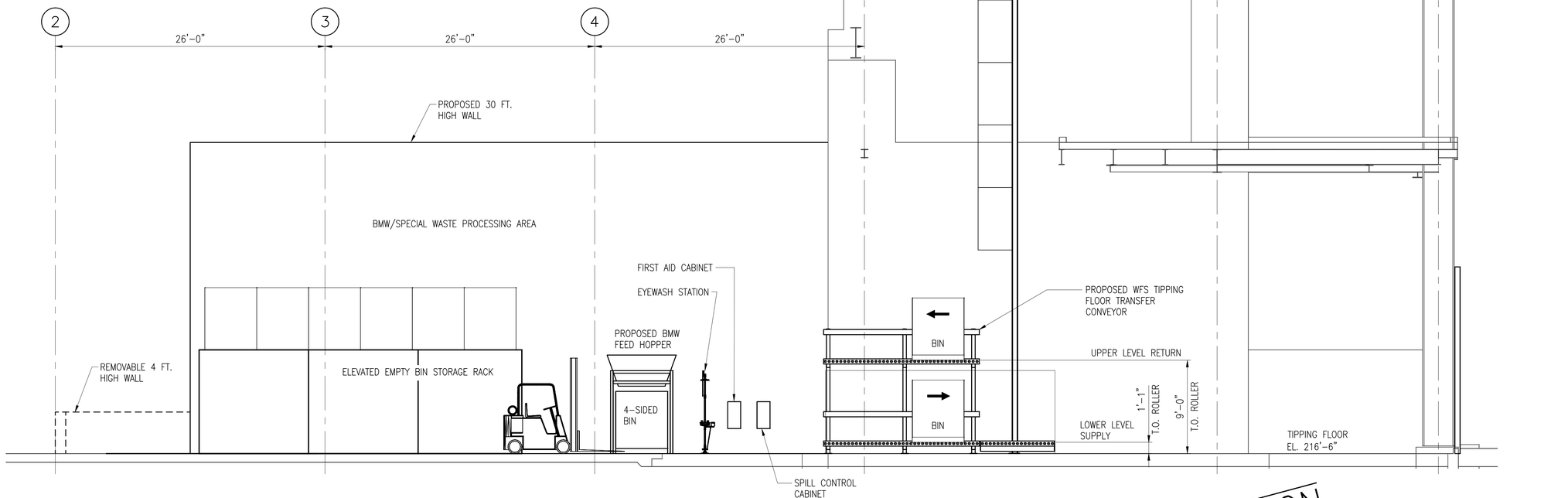

SECTION A / M201

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NOT FOR CONSTRUCTION

PRELIMINARY

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SCALE: 3/16" = 1'-0"

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STATE OF CONNECTICUT · JOSEPH A. THOMPSON · No. 27363 · LICENSED PROFESSIONAL ENGINEER

COVANTA BRISTOL
BRISTOL, CT

BMW HANDLING SYSTEM

No.	Submittal / Revision	App'd.	By	Date
PE	CT DEEP PERMIT REVIEW	AJ	BG	01/29/21
PD	CT DEEP PERMIT REVIEW	AJ	BG	01/20/21
PC	CT DEEP PERMIT REVIEW	AJ	BG	01/15/21
PB	ISSUED FOR REVIEW	AJ	BG	01/13/21
PA	ISSUED FOR REVIEW	AJ	BG	01/11/21

TIPPING FLOOR AND REFUSE PIT BLDG. SECTIONS

Designed By:	Drawn By:	Checked By:
AJ/BG	BG	AJ
Date:	Project No:	Scale:
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Drawing No.:

M-201

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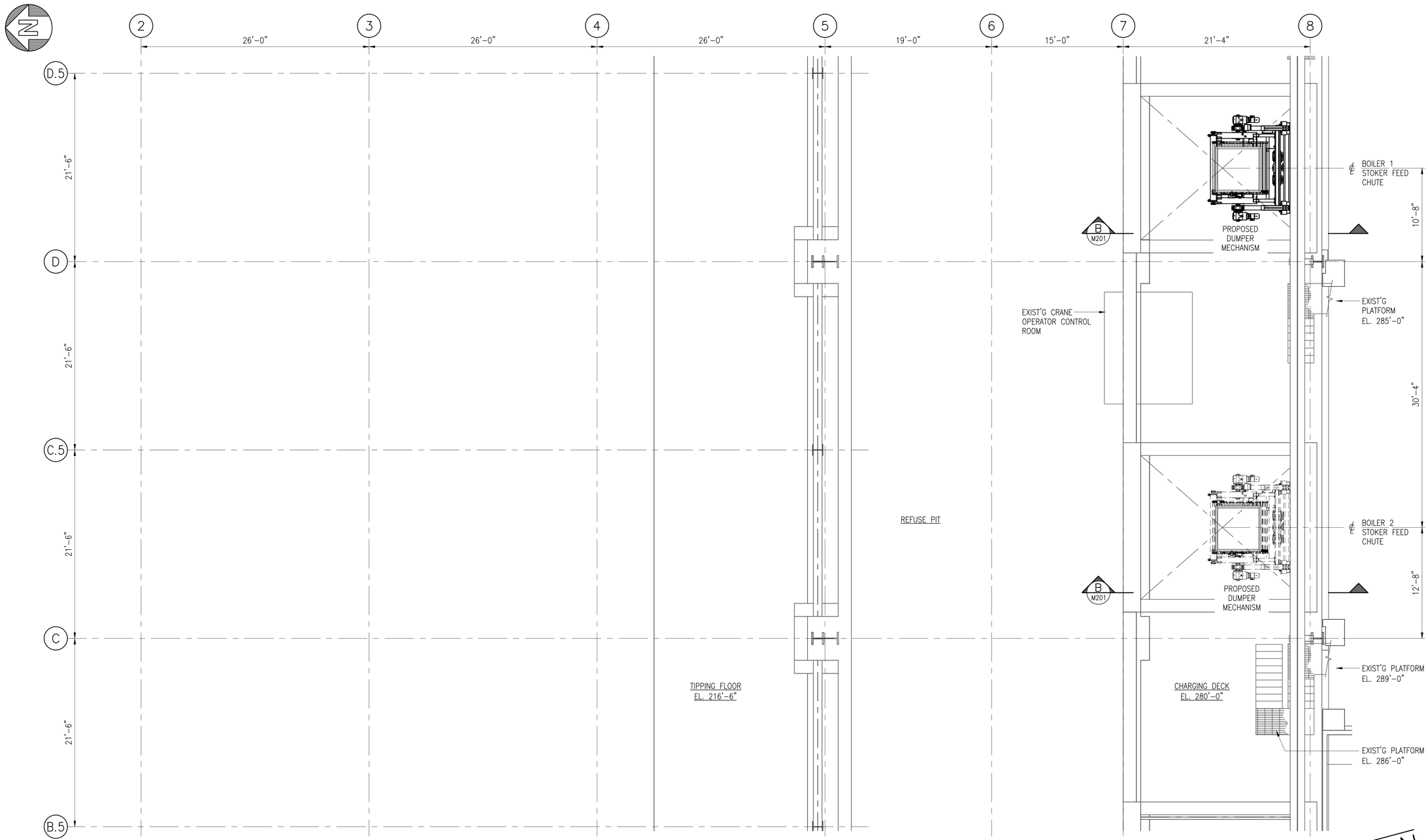

TIPPING FLOOR AND REFUSE PIT BLDG.
SCALE: 3/16" = 1'-0"

NOT FOR CONSTRUCTION

PRELIMINARY

0 5 10 15 20 FEET

SCALE: 3/16" = 1'-0"

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STATE OF CONNECTICUT
JOSEPH J. THOMSON
No. 27363
LICENSED PROFESSIONAL ENGINEER

COVANTA BRISTOL
BRISTOL, CT

BMW HANDLING SYSTEM

No.	Submittal / Revision	App'd	By	Date
PD	CT DEEP PERMIT REVIEW	AJ	BG	01/29/21
PC	CT DEEP PERMIT REVIEW	AJ	BG	01/20/21
PB	CT DEEP PERMIT REVIEW	AJ	BG	01/15/21
PA	ISSUED FOR REVIEW	AJ	BG	01/13/21

TIPPING FLOOR AND
REFUSE PIT BLDG.
FLOOR PLAN - EAST

Designed By:	Drawn By:	Checked By:
AJ/BG	BG	AJ
Date:	Project No:	Scale:
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Drawing No.:

M-202

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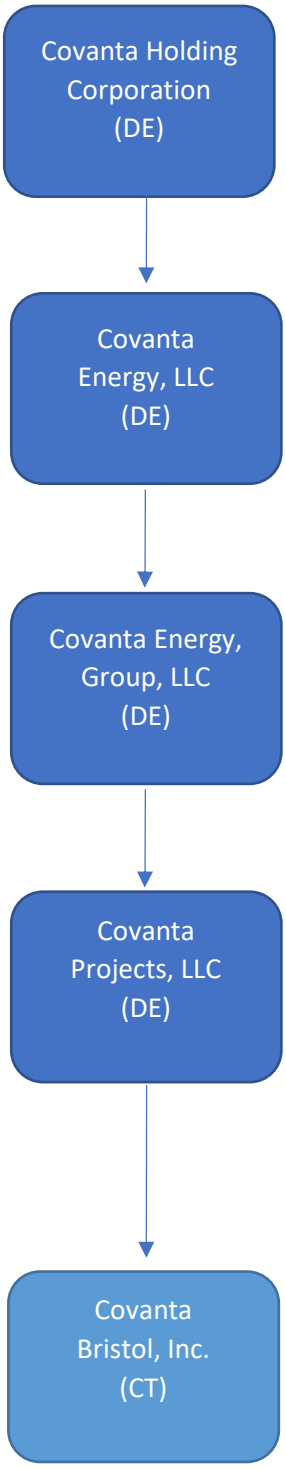
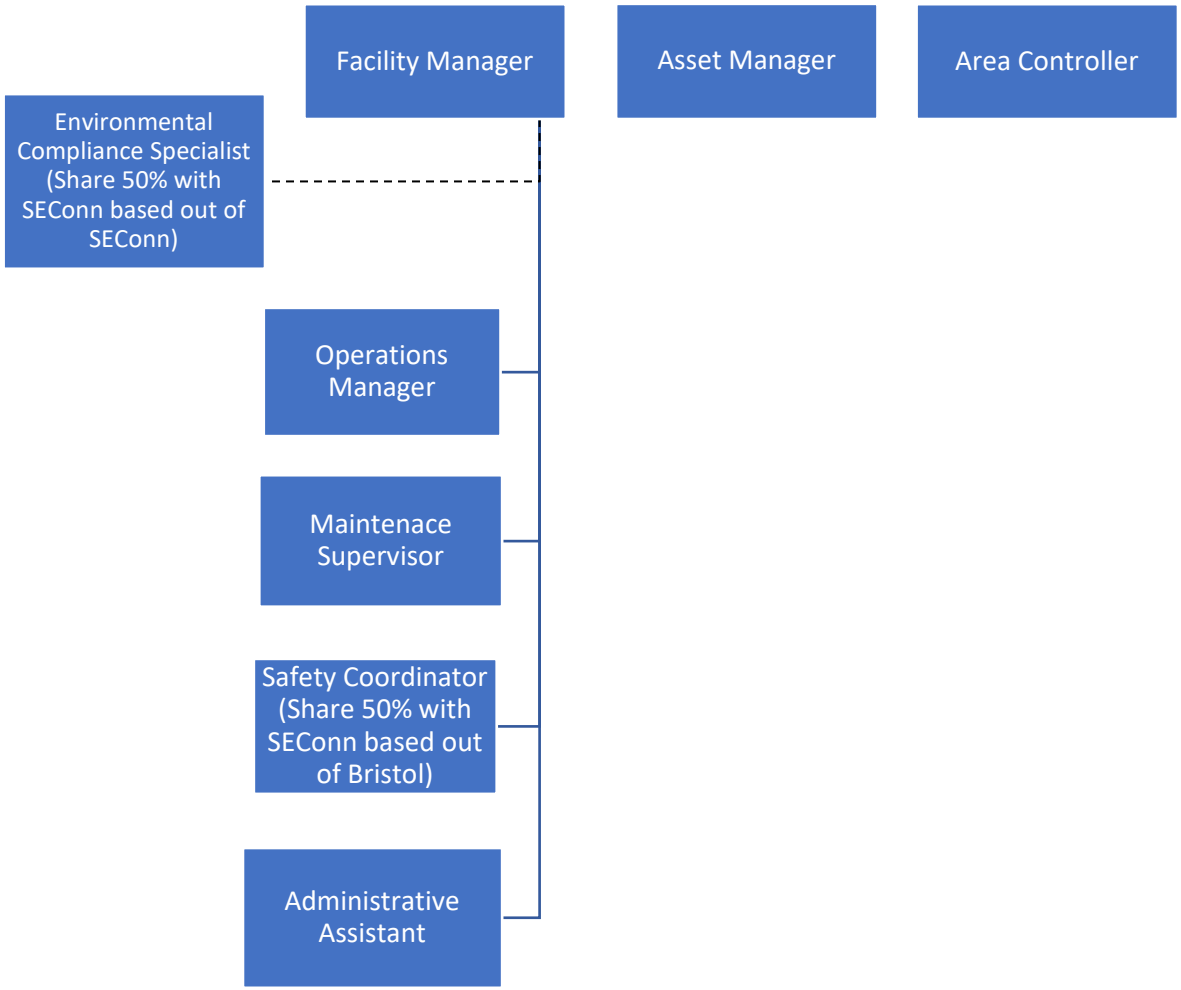
ATTACHMENT 2

ORGANIZATON CHART

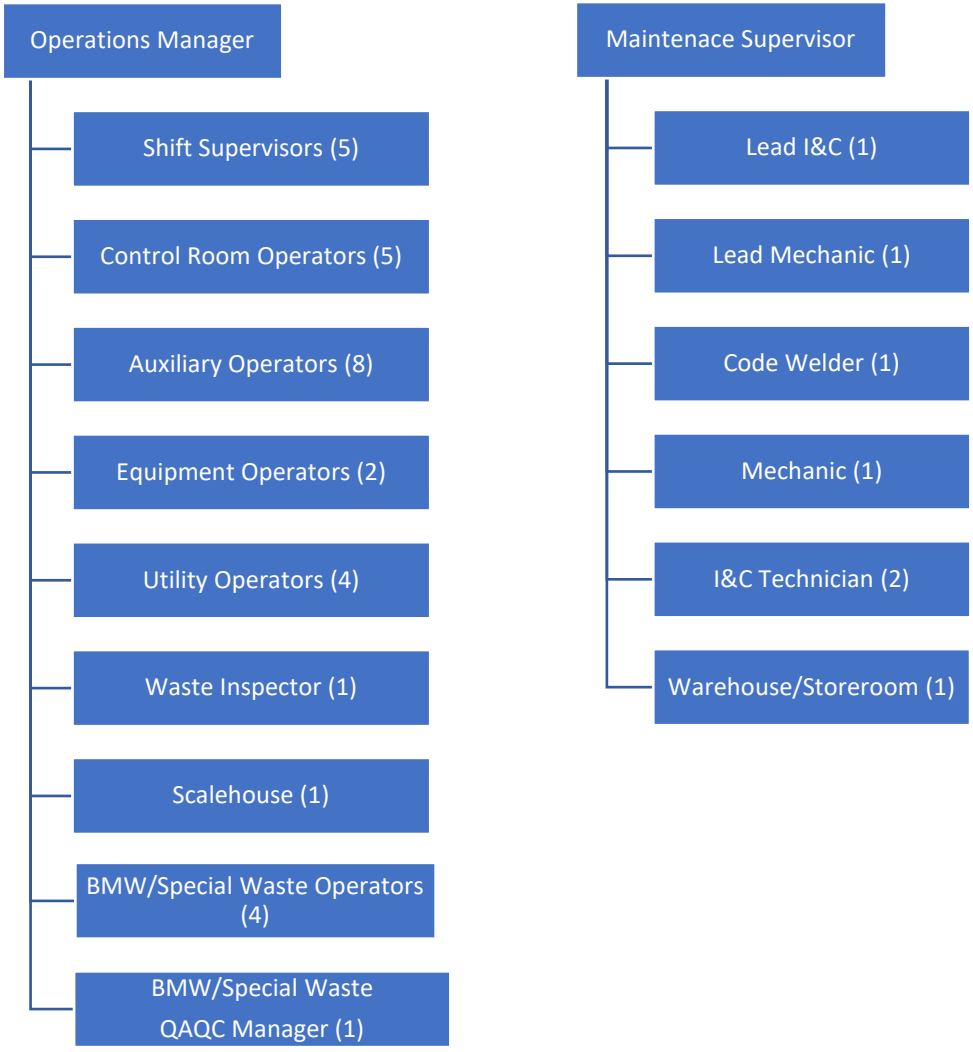
Covanta Bristol, Inc.
Organizational Chart



Facility Organization
Covanta Bristol, Inc.



Facility Organization Continued
Covanta Bristol, Inc.



ATTACHMENT 3

LETTER OF AGREEMENT

Scott Holkeboer
Vice President / General Manager

Covanta Projects, LLC
3001 110th Ave N
St. Petersburg, FL 33716
Tel: 727-564-5000
sholkeboer@covanta.com

February 2, 2021

To Whom It May Concern

The following Covanta Waste-to-Energy facilities are permitted to receive and process Biomedical Waste (BMW), have the staffing, equipment and procedures in place to effectivity manage BMW and have been receiving this material for many years:

Covanta Huntsville
5251 Triana Blvd SW,
Huntsville, AL
35805

Covanta Lake
3830 Rogers Industrial Park Rd,
Okahumpka, FL
34762

Any BMW that would bypass the Covanta Bristol Waste-to-Energy facility in the event of an operational outage can be received and processed at Covanta Huntsville and/or Covanta Lake.

Sincerely,

Scott Holkeboer

Scott Holkeboer
V.P & G.M.

ATTACHMENT L

DETERMINATION OF NEED

Solid Waste Facilities

Attachment L: Determination of Need Information

Please complete this form in accordance with the *Instructions for Completing a Permit Application for Construction and Operation of a Solid Waste Facility* (DEP-SW-INST-100). This form must be submitted with the *Permit Application for Construction and Operation of a Solid Waste Facility* (DEP-SW-APP-100). Complete Part I of this form, if you are constructing or expanding a Resource Recovery Facility (RRF) or a Mixed Municipal Solid Waste (MSW) Composting Facility; complete Part II of this form if you are constructing a Disposal Area for ash residue generated by a RRF; complete Part III of this form if you are constructing a Disposal Area for mixed MSW. Print legibly or type. Attach additional sheets if necessary.

The DEP reserves the right to request any other information deemed pertinent.

Applicant Name: **Covanta Bristol, Inc.**
(As indicated on the *Permit Application Transmittal Form*)

Identify solid waste facility type (check one):

☒ RRF (Complete Part I)

☐ MSW Composting Facility (Complete Part I)

☐ Disposal Area for ash residue generated by a RRF (Complete Part II)

☐ Disposal Area for mixed MSW (Complete Part III)

Part I: RRF or MSW Composting Facility

Section A: Capacities

1. Identify the processing capacity (tons/day) for the proposed new or expanded facility. The processing capacity is the maximum amount the proposed new or expanded facility is designed to process if all systems are operating at 100% capacity. Please refer to Part V: Facility Information, question 2(b) of the *Permit Application for Construction and Operation of a Solid Waste Facility* DEP-SW-APP-100:

   Processing capacity will not change for this project. Covanta is proposing to use no more than its permitted special waste capacity (57 TPD weekly average / 114 TPD maximum) for the disposal of biomedical waste.

2. Identify the guaranteed operating capacity for the proposed new facility or expanded facility, i.e., the number of tons per year that the owner or operator of the proposed new facility or expanded facility will guarantee to accept under long term (at least five year) contracts.

   The guaranteed operating capacity for facility will not change with this project. The Facility is currently permitted at 57 TPD weekly average / 114 TPD maximum for special wastes. Covanta is proposing to use no more than its permitted special waste capacity for the disposal of biomedical waste.

3. Explain the difference between processing capacity and the guaranteed operating capacity, if any.

   Facility does not use all of its permitted special waste capacity (57 TPD weekly average / 114 TPD maximum). Adding this new category of special waste will allow facility to utlize more of its permitted capacity.

Part I: RRF or MSW Composting Facility (continued)

Section B: Waste Generation

List the name, address and phone # of each municipality and all other customers that will send waste to the facility; estimate and identify the amount (tons/year) of mixed MSW that will be separated for recycling prior to disposal at this facility and the amount of mixed MSW that will be received at this facility as evidenced by contracts or letters of intent. Include the methodology used to arrive at the estimates. Also include the name, address and phone # of any current disposal facility presently receiving mixed MSW from each municipality or other customer intending to use this facility.

☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Name and Address and Phone # of Municipality or Other Customer Sending Waste to the Facility	Amount of Recycled Waste (tons/year)	Amount of Waste to Proposed Facility (tons/year)	Methodology Used to Determine the Estimate	Name, Address & Phone # of Facility Presently Receiving Waste
Stericycle	**NA**	**Up to 57 TPD weekly avg / 114 TPD maximum**	**Permitted Capacity (combined all sources)**	**Out-of-state incinerators**
Daniels Health	**NA**	**Up to 57 TPD weekly avg / 114 TPD maximum**	**Permitted Capacity (combined all sources)**	**Out-of-state incinerators**

Part I: RRF or MSW Composting Facility (continued)

Section C: Projected Changes in Waste Generation

1. For each municipality or other customer that will send waste to this facility, describe anticipated changes over the facility's design life in the amount of mixed MSW generated and in the amount of mixed MSW that will be processed at this facility due to the following projected changes:

   ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

   Name of Municipality or Customer: **BMW (various)**

   Projected Population Changes:

   The population declined 0.64% between 2016 and 2020. However, long-term projections estimate an average 5-year increase of 0.34% from 2020 through 2040. Source: https://ctsdc.uconn.edu/2015-to-2040-population-projections-state-level/#.

   Projected Changes in waste generation rate (pounds/capita/year):

   Since there are limited options for recycling and source reduction, projected changes in BMW generation are expected to remain contant at approximately 6 pounds/capita/year. See, Section 3 - Biomedical Waste Management of the Project Narrative (Attachment A) for additional information.

   Source Reduction Programs (include a description of each program):

   There are limited recycling and source reduction programs available for BMW. The only allowable treatment and disposal options available to certain types of BMW is incineration. See, Section 2 - Connecticut Biomedical Waste Regulation of the Project Narrative (Attachment A).

   Projected Changes in Recycling Rate: **Not a significant factor for BMW.**

   Projected Changes in Economic Climate:

   Not a significant factor for BMW.

   Projected Industrial and Commercial Development:

   Not a significant factor for BMW.

   Other Significant Factors:

   Not applicable.

Part I: RRF or MSW Composting Facility (continued)

2. Estimate the change in the rate (tons/year) of MSW that will be processed at this facility due to factors described in Section C (1):

Municipality/Customer	Change in Amount Processed at Facility From Start-Up (tons/year)			
	Five *Years*	Ten *Years*	Fifteen *Years*	Twenty *Years*
BMW (various)	**No change.**	**No change.**	**No change.**	**No change.**

Section D: Operational Information

1. Material Recycled

   a. Estimate the amount (in tons/year and annual average percent by weight of incoming MSW) of mixed MSW anticipated to be received at the proposed facility which will be separated for recycling either prior to combustion or composting (pre-combustion or pre-composting) and for a RRF, after combustion has occurred (post-combustion).

Recyclables Separated from MSW Received Pre-Combustion or Pre-Composting		Recyclables Separated Post-Combustion from RRF	
Tons/Year	**Annual *Average* *% by Weight***	***Tons/Year***	**Annual *Average* *% by Weight***
Not applicable	**to BMW**		

   b. List the name, address and phone # of the recycling facilities which will receive the recyclable materials which will have been separated at the proposed facility.

Recyclable Material Separated	Recycling Facility Name, Address and Phone #
Not applicable to BMW	

Part I: RRF or MSW Composting Facility (continued)

2. Waste Which Will Require Disposal

Estimate the amount (in tons/year and annual average percent by weight and volume) of mixed MSW anticipated to be received at the proposed RRF or the mixed MSW composting facility that will require disposal before processing has begun (i.e., diversion); or once processing has begun but before combustion (i.e. process residue); or once composting has begun (i.e., the material must be disposed before composting process is completed); or after the composting process or combustion process has been completed (i.e., post-combustion or post-composting), including ash residue.

Estimated Amount of Waste Received Which Will be Diverted (Received but Not Processed)		**Estimated Amount of Waste Received Undergoing Composting Process Which Will Require Disposal Before Composting is Complete or Before Combustion (Process residue)**		**Estimated Amount of Waste Received Which Will Require Disposal Post-Composting or Post-Combustion**		
Tons/Year	***Annual Avg % by Weight***	**Tons/*Year***	**Annual *Avg % by Weigh*t**	**Tons/*Year***	**Annual *Avg %***	
					By Weight	**By Volume**
0-1,040	**0-5%**	**N/A**		**No change**		

a. Identify the reason for any diversion:
Diversions may result from planned and unplanned outages. See, Attachment K for additional information.

b. Identify the reason for any disposal that might be required before composting process is completed:
Not applicable.

c. Identify the reason for any process residue:
Not applicable.

d. Identify the reason for disposal post-composting or post combustion:
No change from existing operations.

e. List the name, address and phone # and identify the permit status of the disposal facilities which will receive the waste identified in question 2.

Type of Waste Requiring Disposal	**Name, Address and Phone # of Facility Receiving Waste**	**Permit Status of Facility Receiving Waste**
Ash disposal	**Bondi Island Landfill M Street Ext, Agawam, MA 01001 (413) 787-7840**	**Active Ash Landfill**

Part I: RRF or MSW Composting Facility (continued)

3. List the name, address and phone # of markets which have agreed by contract to accept for a use, other than disposal or incineration, the compost produced by the proposed or expanded mixed MSW composting facility and state the length (duration) of such contracts. (Attach copies of contracts to this sheet.)

Name, Address and Phone # of Market Contracted to Accept Finished Compost (not for disposal or incineration)	Duration of Contract	End Use of Compost
Not applicable		

4. State a contingency plan, including other sources and other wastes, for use of capacity should throughput decline by 10% or more from the guaranteed operating capacity stated in this application.

   The Bristol Facility intends to include BMW within its existing processing capacity and special waste limitation. The Facility is currently limited to 57 TPD (averaged weekly) and 114 TPD (daily maximum). This will allow Covanta operational flexiblity to manage fluctuations in waste stream capacities.

Part I: RRF or MSW Composting Facility (continued)

5. State a contingency plan, including the name and address and permit status of alternate processing or disposal facilities which will accept by-pass waste should throughput increase by 10% or more from the guaranteed operating capacity stated in this application.

   All BMW loads must be scheduled. The Bristol Facility will not accept more BMW than what is allowed by the permit.

6. Provide an analysis of reasonable levels of reserve processing capacity for seasonal peaks and outages.

   The Bristol Facility has two municipal waste combustors (MWCs) which will provide reliability, redundancy, and consistent capacity to process BMW during seasonal peaks and outages. Covanta reviews its facility operating year and determines planned outage periods well in advance of load receipts. BMW receipts would be scheduled accordingly.

   Planned outage periods when both MWCs are not operational occur infrequently (i.e., approximately 3 days once every 5-8 years). During periods when one MWC is undergoing a planned outage, the second MWC can continue to process BMW. Due to the redundancy provided by two MWCs, unplanned outages with both MWCs are rare. If unplanned outages occur, customers would be rescheduled, or if necessary, diverted to other Covanta BMW facilities.

   Covanta maintains a network of operating facilities where waste is routinely scheduled to be diverted while one faciltiy is down for scheduled outages, as well as transfer stations if waste must be diverted out of the region. For BMW, Covanta has a letter of agreement with the Covanta Huntsville Facility and Covanta Lake Facility where BMW can be diverted for planned and unplanned outages. See, Attachment K for a copy of a letter of agreement with Covanta Huntsville Facility and Covanta Lake Facility.

Part I: RRF or MSW Composting Facility (continued)

7. Discuss the capability of the applicant to complete the project. (If this issue was addressed in other sections of this application, refer to the relevant section.)

   Covanta has the experience and capability to complete this project. See, Section 4 (Covanta's Biomedical Waste Program) of the Project Narrative (Attachment A) for additional information on Covanta's experience and Attachments J-2 and J-3 for additional inforation on Covanta's financial capacity to implement this project.

8. Discuss the technical feasibility of the facility. (If this issue was addressed in other sections of this application, refer to the relevant section.)

   The Project Narrative (See, Attachment A) provides details on the techical feasibility of the project.

Part I: RRF or MSW Composting Facility (continued)

9. Provide a demonstration that the guaranteed operating capacity of the proposed new facility or proposed expanded facility, when combined with the guaranteed operating capacity of all other resources recovery facilities with permits to construct, existing RRF's with construction permits to expand and mixed MSW composting facilities, shall not exceed the total guaranteed operating capacity of resources recovery facilities and mixed MSW composting facilities needed to process waste generated in Connecticut as set forth in Connecticut's Solid Waste Management Plan.

   ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

   As described in Section 2 (Connecticut Biomedical Waste Regulation) and Section 3 (Biomedical Waste Management) of the Project Narrative (Attachment A), there is a regional need for BMW treatment and disposal capacity in the northeastern United States. The only acceptable treatment and disposal option for certain types of BMW is incineration. Currently, BMW generated in Connecticut, and the northeastern United States, must be transported hundreds of miles out-of-state for treatment and disposal.

   The Bristol Facility will provide much needed BMW capacity for Connecticut healthcare facilities and the northeastern United States. Additionally, the Covanta Bristol program will provide reliability and consistent capacity for processing BMW due to the Facility operating two MWCs which will minimize the risk of service interruptions. See, Section 8 (Benefits of the Proposed Covanta Bristol BMW Program) in the Project Narrative (Attachment A).

Part II: Disposal Area for Ash Residue Generated by RRF

1. Identify the site capacity of the disposal area (the maximum amount in tons and cubic yards the proposed facility is designed to accept over the lifetime of the facility). Please refer to Part V: Facility Information, question 1 of the permit application form (DEP-SW-APP-100).

   Not Applicable

2. Identify the estimated rate of fill (tons/year and cubic yards/year) for the proposed facility:

   a. Description of methodology used to determine estimated rate of fill:

3. List the name, address and phone # of all RRF to be served by the disposal area; their processing capacity; the estimated rate (tons/year) at which their ash will be disposed of at the proposed facility; and the name, address and phone # of any disposal facility presently receiving ash residue from each RRF.

Name, Address & Phone # of RRF	RRF Processing Capacity	Ash from RRF to be Disposed at Facility (tons/year)	Name, Address, & Phone # of Facility Presently Receiving Ash from this RRF

Part II: Disposal Area for Ash Residue Generated by RRF (continued)

4. Identify other in-state disposal areas that have obtained all necessary permits to construct and their available ash residue capacity. ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Facility Name, Address and Phone #	Available Capacity

5. Identify the transportation system needed to serve the disposal area. (If this issue was addressed in other sections of this application refer to the relevant section.)

Part II: Disposal Area for Ash Residue Generated by RRF (continued)

6. Provide a demonstration that the site capacity of the proposed disposal area for ash residue when combined with the site capacity of all other disposal areas for ash residue with permits to construct, shall not exceed the total site capacity of disposal areas for ash residue needed to process ash residue generated by RRF's in Connecticut as set forth in Connecticut's Solid Waste Management Plan.

   ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Part III: Disposal Area for Mixed MSW

1. Identify the site capacity (the maximum amount in tons and cubic yards the proposed facility is designed to accept over the lifetime of the facility) of the proposed mixed MSW disposal area. Please refer to Part V : Facility Information, question 1 of the permit application form (DEP-SW-APP-100).

   Not Applicable

2. List the name, address and phone # of each municipality and all other customers that will send waste to the facility; the estimated amount (tons/year) of mixed MSW that will be disposed at the proposed facility; a description of the methodology used to determine those estimates; and the name, address and phone # of any disposal facility presently receiving mixed MSW from that municipality or other customer.

Name, Address and Phone # of Municipality or Other Customer Sending Waste to the Facility	Estimated Amount of Waste to the Proposed Facility (tons/year)	Methodology Used to Determine the Estimate	Name, Address and Phone # of Facility Presently Receiving Waste

Part III: Disposal Area for Mixed MSW

3. Identify other in-state disposal areas that have obtained all necessary permits to construct and their available mixed MSW disposal capacity.

☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

Facility Name, Address, and Phone #	Available Capacity
TOTAL:	

4. Identify the transportation system needed to serve the disposal area. (If this issue was addressed in other sections of the application refer to the relevant section.)

Part III: Disposal Area for Mixed MSW

5. Provide a demonstration that the site capacity of the proposed disposal area for mixed MSW when combined with the disposal capacity of all Connecticut MSW disposal and processing facilities that have obtained all necessary permits to construct, shall not exceed the disposal capacity needed to process waste generated in Connecticut as set forth in Connecticut's Solid Waste Management Plan.

   ☐ Check here if additional sheets are necessary, and label and attach them to this sheet.

ATTACHMENT N

CERTIFICATION REGARDING ACTIVITIES PREVIOUSLY LICENSED BY DEP

Attachment N: Certification Regarding Activities Previously Licensed by DEP

Applicant Name: **Covanta Bristol, Inc**
(as indicated on the *Permit Application Transmittal Form*)

Where there has been no change in solid waste activities previously licensed by DEP, certain supporting documents may be incorporated by reference into an application by completing the following certification indicating that *no* changes have been made to the permitted facility and the supporting documents since the documents were submitted and approved by DEP. The documents that are eligible for incorporation by reference are listed below. You are not required to resubmit such documents unless requested by DEP.

This certification must be signed as indicated in the instructions (DEP-SW-APP-100) under Part VII: Applicant Certification, and shall certify as follows: "I have examined the documents identified by checking the applicable boxes below which were previously submitted for permit issuance to the Department of Environmental Protection for the activities which are the subject of this application, and certify that to the best of my knowledge and belief, *no* modifications or changes have been made to the permitted facility and supporting documentation since such documents were approved by the Department of Environmental Protection. I further certify that I will submit such documents to the Department of Environmental Protection upon written request."

Please check the appropriate boxes indicating which documents you are proposing to incorporate into this application by reference and provide the latest date that each document was updated.

☒	*Background Information: (Applicant/Owner/Operator Info)* (DEP-SW-APP-101)	Rev. Date: **06/2011**
☐	*Statement of Consistency with Solid Waste Management Plan* (DEP-SW-APP-102)	Rev. Date:
☒	*Business Information*: (DEP-SW-APP-103)	Rev. Date: **See below**
☐	Applicant's Financial Stability Information	Rev. Date:
☒	Land Ownership Documents	Rev. Date: **1988**
☐	Agreements between all parties involved in the project for the ownership, control, and use of the facility	Rev. Date:
☐	Service agreements and/or contracts with markets, users, final disposal sites, or other processing facilities	Rev. Date:
☐	Planning and zoning approval (required only for applications to construct and operate landfills, incinerators, or resources recovery facilities)	Rev. Date:
☐	*Determination of Need Information* (DEP-SW-APP-104)	Rev. Date:
☐	Facility Plan (not required for applications to construct and operate a solid waste disposal area, e.g. landfill):	Rev. Date:
☐	Engineering drawings	Rev. Date:
☐	Operation and Management Plan	Rev. Date:
☐	*Checklist for Solid Waste Disposal Areas (Landfills)* (DEP-SW/WD-APP-110)	Rev. Date:

John Walker
Signature of Applicant

02/17/21
Date

John Walker
Name of Applicant (print or type)

Vice President
Title (if applicable)

Permit Number: **01701072-PO**