August 3, 2022 File No. 02198081.04

Mr. Mark Wejkszner Air Quality Program Manager Pennsylvania Department of Environmental Protection Northeast Region 2 Public Square Wilkes-Barre, PA 18701

Subject: Plan Approval Application: Northern Realignment Expansion Area Bethlehem Landfill Company

Dear Mr. Wejkszner:

On behalf of Bethlehem Landfill Company, SCS Engineers (SCS) has prepared the enclosed Plan Approval Application for the proposed Northern Realignment expansion area for the Bethlehem Landfill. This application is submitted electronically via the PADEP's OnBase portal in lieu of three (3) hard copies.

A hard copy check for the appropriate application fee of \$7,500 is being sent to the Department under separate cover via the USPS certified mail.

Please do not hesitate to contact me at (703) 471-6150 or David Pannucci at (315) 539-5624 if there are any questions regarding this submittal.

Sincerely,

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Josh Roth, P.E. Vice President SCS Engineers

cc: Astor Lawson, David Pannucci, Cody White – Bethlehem Landfill Company

Enclosures

EXHIBIT	cker.com
BLC 55	I exhibitsti
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Plan Approval Application Northern Realignment Landfill Expansion Bethlehem Landfill

Bethlehem Landfill 2335 Applebutter Road Bethlehem, PA 18015 610-317-3200



02198081.04 | August 2022

11260 Roger Bacon Drive, Suite 300 Reston, VA 20190 703-471-6150

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1.0 INTRODUCTION

This plan approval application addresses the requirements of the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Air Quality's Plan Approval and Operating Permit Program, Title 25 of the Pennsylvania Code, Chapter 127, as they apply to the proposed construction of a volume expansion of the Bethlehem Landfill (the landfill) located in Bethlehem, PA. SCS Engineers (SCS) has prepared this plan approval application on behalf of the Bethlehem Landfill.

The landfill is owned and operated by Bethlehem Landfill Company and is currently subject to the U.S. EPA's New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills (NSPS Subpart XXX) as well as the National Emission Standards for Hazardous Air Pollutants (NESHAP Subpart AAAA) for MSW landfills. The landfill is also subject to the EPA's Title V Operating Permit Program, and has an existing Title V Operating Permit, No, 48-00027.

The proposed expansion (aka, the Northern Realignment) involves an increase in the landfill's volumetric design capacity of approximately 2,304,900 yd³ (CY) of additional net volumetric MSW disposal capacity. The proposed expansion is comprised of both a horizontal/lateral expansion and a vertical expansion on existing disposal areas. A site plan is provided in **Appendix C**.

The landfill currently operates an active gas collection and control system (GCCS) in accordance with its Title V operating permit, NSPS Subpart XXX and NESHAP Subpart AAAA. Collected LFG is routed to an existing enclosed ground flare, which the landfill operates in accordance with its Title V operating permit. The landfill recently applied for and was issued plan approval 48-00027C which authorizes the installation of additional flaring capacity (utility flare and second enclosed flare). Therefore, in the future, collected LFG may also be routed to the utility flare and/or second enclosed ground flare which will be installed, if necessary. In the future, collected LFG may also be routed to a third-party plant for treatment and subsequent use. The plant is currently under construction and will be owned and operated in accordance with separate permits by Aria Energy East, LLC.

The primary air emissions from the Northern Realignment will be uncollected fugitive emissions of volatile organic compounds (VOCs), a portion of which are hazardous air pollutants (HAPs), and greenhouse gases (GHGs). The LFG collection and control system significantly reduces the fugitive emissions of these pollutants.

2.0 REGULATORY APPLICABILITY ANALYSIS

 Regulatory Standard
 Applicable? (Y/N)
 Comments

 --Federal Regulatory Discussion-

 40 CFR Part 60, NSPS
 Y
 The facility is subject to the requirements of

An analysis of the applicability of state and federal regulations is provided below.

40 CFR Part 60, NSPS Subpart XXX	Y	The facility is subject to the requirements of NSPS Subpart XXX.
40 CFR Part 63, NESHAP Subpart AAAA	Y	The facility is subject to the requirements of NESHAP Subpart AAAA.

Regulatory Standard	Applicable? (Y/N)	Comments
		The facility is subject to the Title V operating permit program by virtue of its applicability under 60.762(c).
Title V Operating Permit Program	Y	As noted in Section B of the plan approval application form, with this application the facility requests the removal of the existing carbon monoxide (CO) emission restriction of 99.9 tons per year. Upon this, the facility will also be a Title V major source by virtue of its potential CO emissions.
Non-Attainment New Source Review (NNSR), 25 Pa Code Chapter 127, Subchapter E	Ν	Potential emissions from the project are less than applicable major VOC and major NO _x emitting facility thresholds.
Prevention of Significant Deterioration (PSD)	Ν	Potential emissions associated with the project are less than the major source thresholds for all regulated PSD pollutants.
-	-State Regula	atory Discussion
Best Available Technology (BAT)	Y	A BAT analysis is provided in Appendix B.
25 Pa Code §123.1 and §123.2	Y	The facility is subject to limitations for fugitive emissions incorporated into its Title V permit.
25 Pa Code §123.31	Y	The facility is subject to limitations for malodors incorporated into its Title V permit.
25 Pa Code §123.41, §123.42 and §123.43	Y	The facility is subject to limitations for visible emissions incorporated into its Title V permit.
25 Pa Code §129.14	Y	The facility will not conduct open burning operations unless in accordance with 25 Pa Code §129.14 and its Title V permit.
RACT I (25 Pa Code §129.91)	Ν	The facility is not a major NO _x or major VOC emitting facility.
RACT II (25 Pa Code §129.96)	N	The facility is not a major NO _x or major VOC emitting facility.

3.0 PERMIT APPLICATION FORMS

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This form is used by the Department of Environmental Protection (DEP) to inform our programs regarding what other DEP permits or authorizations may be needed for the proposed project or activity. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the DEP.

Related ID#s (lf Known)		DEP USE ONLY						
Client ID# 112995	APS ID#		Date Received & General Notes						
Site ID# 255983	Auth ID#		1						
Facility ID# 549728			1						
	CLIENT INFO	RMATIC	N						
DEP Client ID# C	lient Type / Code		Dun & Br	adstreet ID#	ŧ				
P	ACORP								
Legal Organization Name or Registe	ered Fictitious Name	Er	nployer ID# (EIN) Is the E	IN a SSI	N?			
Bethlehem Landfill Company		22	2-3575227			NO			
State of Incorporation or Registration	on of Fictious Name		ration LLC	Partnersh	ip 🗌 Ll				
Delaware	Delaware								
		Estate/	Trust 📋 Other						
Individual Last Name	First Name	M	l Si	iffix					
Additional Individual Last Name	First Name	М	l Sı	Iffix					
Mailing Address Line 1 Mailing Address Line 2									
2335 Applebutter Road	04 4			O a sure tore of					
Address Last Line – City	State		P+4	Country					
Client Contact Last Name	Eirot Nome	18	010-0004 MI	USA	uffix				
Pannucci	FI rst Name David		IVII	3	ullix				
Client Contact Title	Daviu	Phone	Ext	C	ell Pho	ne			
Regional Engineer		(610) 317	-3200						
Email Address			FA	X					
David.Pannucci@wasteconnections.c	om								
	SITE INFOR	MATION	N						
DEP Site ID# Site Name									
255983 Bethlehem Landf	ill								
EPA ID# PAD982565962	Estimated Number of	Employee	es to be Present	at Site	15				
Description of Site									
Sanitary/Municipal Solid Waste Landfi									
Tax Parcel ID(s): P7 5 33 0719					T	01-1-			
County Name(s) Mun	icipality(ies)			Boro	IWP	State			
						PA			
					╎╞┤┤				
Site Location Line 1	S	ite Locati	on Line 2						
2335 Applebutter Road	0								
Site Location Last Line – City	S	tate Z	ZIP+4						
Bethlehem	P	A 1	18015-6004						
Detailed Written Directions to Site									
From I-78 take Exit 67, merge onto PA	A-412N/Hellertown Road	d toward B	ethlehem, drive 1	.5 miles, the	en bear r	iaht onto			

From I-78 take Exit 67, merge onto PA-412N/Hellertown Road toward Bethlehem, drive 1.5 miles, then bear right onto Shimersville Road, in 0.7 milesturn right onto Applebutter Road, drive 1.5 miles on Applebutter Road, the facility entrance is on the left.

Application						
Site Contact Last Name	First Na	ame		МІ	S	uffix
Pannucci	David	-			_	
Site Contact Title		Site C	ontact Firm			
Regional Engineer		Bethle	hem Landfill (Company		
Mailing Address Line 1		Mailin	g Address Li	ine 2		
2335 Applebutter Road			-			
Mailing Address Last Line – City		State	ZIP+4			
Bethlehem		PA	18015-0	6004		
Phone Ext FA	X	Email	Address			
(610) 317-3200		David.	Pannucci@w	asteconnect	ions.com	
NAICS Codes (Two- & Three-Digit Codes – L	ist All That Ap	oly)	6	-Digit Code	(Optional)	
562212			5	62212		
Client to Site Relationship						
OWNOP						
	FACILITY	INFORM	IATION			
Modification of Existing Facility					Yes	No
1. Will this project modify an existir	ng facility, sv	stem, or a	ctivity?		$\overline{\boxtimes}$	
2. Will this project involve an additi	on to an exis	ting facili	ty, system. o	r activity?	\boxtimes	
If "Yes", check all relevant facility ty	pes and prov	ide DEP fa	cility identifica	ation number	rs below.	
,,,,			- ,			
Facility Type	DEP Fac ID	#	Facility Type		DI	EP Fac ID#
Air Emission Plant	549728		Industrial Miner	ration		
Beneficial Use (water)		닏	Laboratory Loca			
Blasting Operation	-	닏	Land Recycling	Cleanup Locati	ion	
Captive Hazardous Waste Operation			Mine Drainage Recycling Proje	I reatment / Lan	Id	
Coal Ash Beneficial Use Operation		\square	Municipal Waste	e Operation	26	68729
Coal Mining Operation			Oil & Gas Encro	pachment Locat	ion	
Coal Pillar Location			Oil & Gas Locat	tion		
Commercial Hazardous Waste Operation			Oil & Gas Wate	r Poll Control Fa	acility	
Dam Location			Public Water Su	upply System		
Deep Mine Safety Operation -Anthracite			Radiation Facili	ty		
Deep Mine Safety Operation -Bituminous		□	Residual Waste	Operation		
Deep Mine Safety Operation -Ind Minerals		🛛	Storage Tank L	ocation		
Encroachment Location (water, wetland)		닏	Water Pollution	Control Facility		
Erosion & Sediment Control Facility	-	님	Water Resource	9		
Explosive Storage Location		LI	Other:			
Latitude/Longitude		Latitude			Lonaitude	9
Point of Origin	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	40	37	26	75	18	27
Horizontal Accuracy Measure	Feet 860)	Or	- Me	ters	
Horizontal Reference Datum Code		American	Datum of 102	27		
		American	Datum of 10	-'		
			System of 10	84		
Horizontal Collection Method Code			Cystem of 19			
Reference Point Code						
Altitude	Feet		0r	. Ma	oters	
Altitude Datum Name		Jational Ge		al Datum of 1	1929	
					1020	

	The North American Vertical Datum of 1988 (NAVD88)						
Altitude (Vertical) Location Datum Collection Method Code							
Geometric Type Code							
Data Collection Date							
Source Map Scale Number	Inch(es)	=	Feet				
Or	Centimeter(s)	=	Meters				

PROJECT INFORMATION

						-				
Project	t Name Som Landfill Nort	hon Poolig	nmont							
Project	Project Description									
Addition	Addition of landfill disposal capacity									
Project Roth	t Consultant La	st Name	First Na Joshua	me			MI G	ę	Suffix	
Project	t Consultant Tit	le		Consulting F	irm					
Project Director		SCS Enginee	ers							
11260 F) Address Line Roger Bacon Dri	1 VA		Suite 300	ress	Line 2	2			
Addres	s Last Line – C	itv		State			ZIP+4	4		
Reston		,		VA			20190)		
Phone	1-6150	Ext	FAX	Email Add	ress	i neers (om			
Time S	chedules	Proiect M	lilestone (Optional)	01011@3036	engii	10013.0	Join			
Upon P	ADEP	Begin con	struction							
Approv	al	-								
1 1	s the project lo	cated in or	within a 0.5-mile ra	diue		Yes		No		
1. K	of an Enviror	mental J	ustice community	as		100		110		
d	lefined by DEP	?	·····							
	To determine	if the projec	t is located in or within	a 0.5-mile radiu	is of a	an envi	ronment	tal iustica cor	nmunitv	nlaasa usa
	the online En	vironmental v	Justice Areas Viewer.		5 01 0		- Chillion		innunity	
2 F	lave you infor	med the s	urrounding comm	inity	\boxtimes	Yes		No		
2. p	prior to subn	nitting the	e application to	the		100		110		
Ċ	Department?	U								
		6		N <i>A A</i>						
N C	County and Lower	Saucon Tow	<u>_etter_notifications_to</u> (nship	Northampton						
<u> </u>	lave vou addr	essed cor	nmunity concerns	that	Π	Yes		No	\boxtimes	N/A
v	vere identified?									
	lf no, please b	oriefly descri	be the community conc	erns that have b	een	express	sed and	not addresse	ed.	
4 10	s vour project f	unded by	state or federal gran	nte?		Yes	\square	No		
	lote: If "Yes". st	becifv what a	spect of the project is r	elated to the gra	ant ar	nd provi	ide the c	arant source.	contact	person
	and grant	expiration da	ate.	5				, ,		1
	Aspect of F	Proiect Relat	ed to Grant							
	Grant Sou	ce:								
	Grant Cont	act Person:								
	Grant Expi	ration Date:								
5. Is	s this applic	ation for	an authorization	on		Yes	\boxtimes	No		
A	Appendix A o	f the Lan	d Use Policy?	(For						
r	eferenced list,	see Appe	ndix A of the Land	Use						
F	Yolicy attached		tructions)	piect to the Land		Policy				
N	If "Yes" to	Question 5	the application is subject	t to this policy a	and th	ne Appl	icant sh	ould answer t	he addit	ional
	questions	in the Land	Use Information section	on.						

LAND USE INFORMATION

<u>Note</u>: Applicants should submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	Is there an adopted county or multi-county comprehensive plan?		Yes		No
2.	Is there a county stormwater management plan?		Yes		No
3.	Is there an adopted municipal or multi-municipal comprehensive		Yes		No
	plan?				
4.	Is there an adopted county-wide zoning ordinance, municipal zoning		Yes		No
	ordinance or joint municipal zoning ordinance?				
	Note: If the Applicant answers "No" to either Questions 1, 3 or 4, the provisions	of the PA M	/IPC are no	ot appli	cable and the
	Applicant does not need to respond to questions 5 and 6 below.				
	If the Applicant answers "Yes" to questions 1, 3 <u>and</u> 4, the Applicant shou	Id respond	to questio	ns 5 ar	nd 6 below.
5.	Does the proposed project meet the provisions of the zoning		Yes		No
	ordinance or does the proposed project have zoning approval? If				
	zoning approval has been received, attach documentation.				
6.	Have you attached Municipal and County Land Use Letters for the		Yes		No
	project?				

COORDINATION INFORMATION

<u>Note</u>: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 utilizing the <u>Project Review Form</u>.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	Is this a coal mining project? If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	Yes	\boxtimes	No
1.1	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?	Yes		No
1.2	Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?	Yes		No
1.3	Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?	Yes		No
1.4	For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?	Yes		No
1.5	Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	Yes		No
1.6	Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?	Yes		No
2.0	Is this a non-coal (industrial minerals) mining project? If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	Yes	\boxtimes	No
2.1	Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?	Yes		No
2.2	Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?	Yes		No

2.3	Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non- metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?	Yes		Νο
_	treatment facilities be constructed and treated waste water discharged to surface waters?	 		
2.5	Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?	Yes		No
3.0	Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well? If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	Yes		No
3.1	Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?	Yes		No
3.2	Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system? If "Yes", discuss in <i>Project Description</i> .	Yes		No
3.3	Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?	Yes		No
4.0	Will the project involve a construction activity that results in earth disturbance? If "Yes", specify the total disturbed acreage.	Yes		No
	 4.0.1 I otal Disturbed Acreage approximately 29 acres of addition 4.0.2 Will the project discharge or drain to a special protection water (EV or HΩ) or an EV wetland? 	r area Yes	\boxtimes	No
	4.0.3 Will the project involve a construction activity that results in earth disturbance in the area of the earth disturbance that are contaminated at levels exceeding residential or non-residential medium-specific concentrations (MSCs) in 25 Pa. Code Chapter 250 at residential or non- residential construction sites, respectively?	Yes		No
5.0	Does the project involve any of the following: water obstruction and/or encroachment, wetland impacts, or floodplain project by the Commonwealth/political subdivision or public utility? If "Yes", respond to 5.1-5.7. If "No", skip to Question 6.0.	Yes		No
5.1	Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?	Yes		No
5.2	Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?	Yes		No
5.3	Floodplain Projects by the Commonwealth, a Political Subdivision of the Commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?	Yes		No
5.4	Is your project an interstate transmission natural gas pipeline?	Yes		No

5.5	Does your project consist of linear construction activities which result in earth disturbance in two or more DEP regions AND three or more counties?	Yes		No
5.6	Does your project utilize Floodplain Restoration as a best management practice for Post Construction Stormwater Management?	Yes		No
5.7	Does your project utilize Class V Gravity / Injection Wells as a best management practice for Post Construction Stormwater Management?	Yes		No
6.0	Will the project involve discharge of construction related stormwater to a dry swale, surface water, ground water or separate storm water system?	Yes	\boxtimes	No
6.1	Will the project involve discharge of industrial waste stormwater or wastewater from an industrial activity or sewage to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?	Yes		No
7.0	Will the project involve the construction and operation of industrial waste treatment facilities?	Yes	\boxtimes	No
8.0	 Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations? If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the <i>Project Description</i>, where applicable. 8.0.1 Estimated Proposed Flow (gal/day) 	Yes		No
9.0	Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already- developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?	Yes		No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	Yes		No
10.0	Is this project for the beneficial use of biosolids for land application within Pennsylvania? If "Yes" indicate how much (i.e. gallons or dry tons per year). 10.0.1 Gallons Per Year (residential septage) 10.0.2 Dry Tons Per Year (biosolids)	Yes		No
11.0	Does the project involve construction, modification or removal of a dam? If "Yes", identify the dam. 11.0.1 Dam Name	Yes		No
12.0	Will the project interfere with the flow from, or otherwise impact, adam? If "Yes", identify the dam.12.0.1Dam Name	Yes		No
13.0	Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?	Yes		No
	13.0.1 If "Yes", is the operation subject to the agricultural exemption in 35 P.S. § 4004.1?	Yes		No
	 13.0.2 If the answer to 13.0.1 is "No", identify each type of emission followed by the estimated amount of that emission. Enter all types & amounts of See Appendix A. emissions; separate each set with semicolons. 			

14.0	Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year? If "Yes", check all proposed sub-facilities.14.0.1Number of Persons Served		Yes		No
	14.0.2 Number of Employee/Guests				
	14.0.3 Number of Connections				
	14.0.4 Sub-Fac: Distribution System		Yes		No
	14.0.5 Sub-Fac: Water Treatment Plant		Yes		No
	14.0.6 Sub-Fac: Source		Yes		No
	14.0.7 Sub-Fac: Pump Station		Yes		No
	14.0.8 Sub Fac: Transmission Main		Yes	Ц	No
	14.0.9 Sub-Fac: Storage Facility		Yes	<u> </u>	No
15.0	Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well,		Yes		No
16.0	spring of minimation gallery:		Ves		No
10.0	"Yes" indicate name of supplier and attach letter from supplier stating		103		
	that it will serve the project				
	16.0.1 Supplier's Name				
	16.0.2 Letter of Approval from Supplier is Attached		Yes		No
17.0	Will this project be served by on-lot drinking water wells?		Yes		No
18.0	Will this project involve a new or increased drinking water		Yes		No
	withdrawal from a river, stream, spring, lake, well or other water				
	bod(ies)? If "Yes", reference Safe Drinking Water Program.				
	18.0.1 Source Name				
19.0	Will the construction or operation of this project involve treatment,	\boxtimes	Yes		No
	storage, reuse, or disposal of waste? If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.				
	19.0.1 Type & Amount Municipal Solid Waste, Approximately 2.5	<u>million c</u>	ubic yards		
20.0	Will your project involve the removal of coal, minerals, contaminated media, or solid waste as part of any earth disturbance		Yes	\bowtie	No
	activities?				
21.0	Does your project involve installation of a field constructed		Yes	\boxtimes	No
	underground storage tank? If "Yes", list each Substance & its				
	Capacity. <u>Note</u> : Applicant may need a Storage Tank Site Specific Installation Permit.				
	21.0.1 Enter all substances &				
	capacity of each; separate				
	each set with semicolons.				
22.0	Does your project involve installation of an aboveground storage		Yes	\boxtimes	No
	tank greater than 21,000 gallons capacity at an existing facility? If				
	"Yes", list each Substance & its Capacity. <u>Note</u> : Applicant may need a				
	Storage I ank Site Specific Installation Permit.				
	22.U.1 Enter all substances &				
	capacity of each; separate				
23 N	The set will set involve installation of a tank greater than		Yee	\square	No
20.0	1,100 gallons which will contain a highly hazardous substance as		103		
	defined in DEP's Regulated Substances List. 2570-BK-DEP2724? If				
	"Yes", list each Substance & its Capacity. Note: Applicant may need a				
	Storage Tank Site Specific Installation Permit.				
	23.0.1 Enter all substances &				
	capacity of each; separate				
	each set with semicolons.				

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24.0	Does your project involve installation of a storage tank at a new		Yes		No
	facility with a total AST capacity greater than 21,000 gallons? If	:			
	"Yes", list each Substance & its Capacity. Note: Applicant may need a				
	Storage Tank Site Specific Installation Permit.				
	24.0.1 Enter all substances &				
	capacity of each; separate				
	each set with semicolons.				
	NOTE: If the project includes the installation of a regulated storage tank	system,	including of	liesel e	mergency
	generator systems, the project may require the use of a Department Ce	rtified Ta	ink Handlei	. For a	a full list of
	regulated storage tanks and substances, please go to www.dep.pa.gov s	search te	rm storage	tanks	
25.0	Will the intended activity involve the use of a radiation source?		Yes	\boxtimes	No
	CERTIFICATION				
Lcerti	fy that I have the authority to submit this application on behalf of the	applica	nt named	herein	and that
the in	formation provided in this application is true and correct to the best of	of my kn	owledge a	ad info	rmation

For applicants supplying an EIN number: I am applying for a permit or authorization from the Pennsylvania Department of Environmental Protection (DEP). As part of this application, I will provide DEP with an accurate EIN number for the applicant entity. By filing this application with DEP, I hereby authorize DEP to confirm the accuracy of the EIN number provided with the Pennsylvania Department of Revenue. As applicant, I further consent to the Department of Revenue discussing the same with DEP prior to issuance of the Commonwealth permit or authorization.

Astor Lawson Type or Print Name 822000 **District Manager** Title Signature

2700-PM-AQ0007 Rev. 7/2004



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY

PROCESSES

Application for Plan Approval to Construct, Modify or Reactivate an Air Contamination Source and/or Install an Air Cleaning Device

This application must be submitted with the General Information Form (GIF).

Before completing this form, read the instructions provided for the form.

Section A - Fac	ility Name, Ch	ecklist And Certification					
Organization Name or Registered Fictitious Na	me/Facility Name:	Bethlehem Landfill Company					
DEP Client ID# (if known): 112995							
Type of Review required and Fees:							
 Source which is not subject to NSPS, Source requiring approval under NSP Source requiring approval under NSR Source requiring the establishment of Source requiring approval under PSD 	NESHAPs, MAC S or NESHAPS o regulations: a MACT limitation	Γ, NSR and PSD:\$ r both:\$ <u>7,500</u> \$ δ:\$ \$					
	Applicant's C	hecklist					
Check the following list to n	nake sure that al	the required documents are included.					
General Information Form (GIF)							
🛛 Processes Plan Approval Applica	tion						
Compliance Review Form or pro facilities submitting on a periodic ba	ovide reference o sis:	of most recently submitted compliance review form for					
Copy and Proof of County and M	unicipal Notificat	lions					
Permit Fees	-						
Addendum A: Source Applicable	Requirements (on	v applicable to existing Title V facility)					
Certification of Truth, Accu	Iracy and Con	pleteness by a Responsible Official					
I, Astor Lawson	, certify under	penalty of law in 18 Pa. C. S. A. §4904, and					
35 P.S. §4009(b) (2) that based on information	n and belief forme	d after reasonable inquiry, the statements and information					
in this application are true, accurate and compl	ete.						
md -		61212222					
(Signature):		Date: 01010000					
Name (Print): Astor Lawson		Title: District Manager					
	OFFICIAL US	EONLY					
Application No.	Unit ID	Site ID					
DEP Client ID #: APS. ID AUTH. ID							
Date Received Date Assigned Reviewed By							
Date of 1 st Technical Deficiency		Date of 2 nd Technical Deficiency					
Comments:							

Section B - Processes Information									
1. Source Inform	1. Source Information								
Source Description (give type, use, raw n	naterials, product	t, etc). Attach addition	nal sheets as	s necessary.				
Municipal solid waste solid waste. Landfill	e (MSW) landfill expa gas is generated via	ansion (Northern the anaerobic de	Realignment). The la ecomposition of waste	andfill accept e.	s and disposes of municipal				
Manufacturer N/A	Manufacturer Model No. Number of Sources N/A N/A								
Source Designation Northern Realignment			m Capacity pansion is designed to nodate approximately 00 cubic yards of MS ¹	Rate The net acco W. 2,304	ated Capacity ne expansion is designed to commodate approximately net 304 900 cubic yards of MSW				
Type of Material Pro	cessed								
Maximum Operatin Schedule represents schedule for active of	g Schedule that which landfill ei isposal operations.	missions are exp	ected (LFG generatio	n is continue	es) and does not indicate the				
Hours/Day 24	Days/Wee 7	łk	Days/Year 365		Hours/Year 8,760				
Operational restriction	ons existing or reque	sted, if any (e.g.,	bottlenecks or volunt	ary restrictio	ns to limit PTE)				
No new operational restrictions are requested with this application. The facility's Title V permit incorporates an existing carbon monoxide (CO) emission restriction of 99.9 tons per year. This application requests the removal of this restriction.									
Capacity (specify u	nits)								
Per Hour	Per Day		Per Week						
Operating Schedul	9								
Hours/Day 24	Days/Wee	ЭК	Days/Year 365		Hours/Year 8.760				
Seasonal variations	(Months) From		to						
If variations exist	, describe them	Not applicab	le						
2. Fuel – NOT A	PPLICABLE								
Туре	Quantity Hourly	Annually	Sulfur	% Ash (Weight)	BTU Content				
Oil Number	GPH @ 60°F	X 10 ³ Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F				
Oil Number	GPH @ 60°F	X 10³ Gal	% by wt		Btu/Gal. & Lbs./Gal. @ 60 °F				
Natural Gas	SCFH	X 10 ⁶ SCF	grain/100 SCF		Btu/SCF				
Gas (other)	SCFH	X 10 ⁶ grain/100			Btu/SCF				
Coal	TPH	Tons	% by wt		Btu/lb				
Other *									
*Note: Describe and	furnish information	separately for oth	ner fuels in Addendum	ו B.					

Section B - Processes Information (Continued)							
3. Burner – NOT APPLICABLE							
Manufacturer	Type and I	Model No.			Number of Burners		
Description:							
Rated Capacity		Maximum C	Capacity				
4. Process Storage Vessels – NOT	APPLICABLE						
A. For Liquids:							
Name of material stored							
Tank I.D. No.	Manufacturer			Date Insta	lled		
Maximum Pressure		Capacity	(gallons/M	leter ³)			
Type of relief device (pressure set vent/	conservation vent	emergency v	vent/open v	rent)			
Relief valve/vent set pressure (psig)		Vapor pr	Vapor press. of liquid at storage temp. (psia/kPa)				
Type of Roof: Describe:							
Total Throughput Per Year		Number	of fills per	day (fill/day)	:		
		Filling Ra	Filling Rate (gal./min.):				
B. For Solids		Duration	01 111 111./111	ı <i>)</i> .			
Type: Silo Storage Bin Othe	r, Describe	Name of	Material S	tored			
Slio/Storage Bin I.D. No.	Manufacturer			Date Insta	lied		
State whether the material will be stored	l in loose or bags	in silos	Capacity	(Tons)			
Turn over per year in tons			Turn over per day in tons				
Describe fugitive dust control system for	r loading and hand	lling operation	ns				
Describe material handling system							
5. Request for Confidentiality – NO	OT APPLICABLE						
Do you request any information on this a lf yes, include justification for confidentia	application to be tr ality. Place such i	reated as "Co nformation or	nfidential"? n separate	pages mark	Yes No ed " confidential ".		

Section B - Processes Information (Continued)

6. Miscellaneous Information

Attach flow diagram of process giving all (gaseous, liquid and solid) flow rates. Also, list all raw materials charged to process equipment, and the amounts charged (tons/hour, etc.) at rated capacity (give maximum, minimum and average charges describing fully expected variations in production rates). Indicate (on diagram) all points where contaminants are controlled (location of water sprays, collection hoods, or other pickup points, etc.). Describe collection hoods location, design, airflow and capture efficiency. Describe any restriction requested and how it will be monitored.

See Process Flow Diagram in Appendix C.

Describe fully the facilities provided to monitor and to record process operating conditions, which may affect the emission of air contaminants. Show that they are reasonable and adequate.

Incoming MSW will be measured and recorded. MSW will be observed by operators where required. Records maintained on-site.

Describe each proposed modification to an existing source.

The Northern Realignment expansion area will increase the MSW disposal capacity by approximately 2,304,900 net cubic yards.

Identify and describe all fugitive emission points, all relief and emergency valves and any by-pass stacks.

Landfill gas which is not collected by the site's gas collection and control system (GCCS) will be considered fugitive emissions.

Describe how emissions will be minimized especially during start up, shut down, process upsets and/or disruptions.

Emissions will be minimized through the use of daily, intermediate, and final cover systems. The existing LFG collection and control system will be progressively expanded into the new waste disposal area per PADEP BAT requirements and applicable permit requirements to capture LFG. Operation of the GCCS will be in accordance with the Title V permit, NSPS Subpart XXX and NESHAP Subpart AAAA.

 Anticipated Milestones:
 i. Expected commencement date of construction/reconstruction/installation:
 Q3 2023

 ii. Expected completion date of construction/reconstruction/installation:
 Q1 2024

 iii. Anticipated date of start-up:
 Q1 2024

Section C - Air Cleaning Device									
1. Precontrol Emiss	sions*								
		Maximum Emi	ssion Rate		Calculation/				
Pollutant	Specify Units	Pounds/Hour	Hours/Year	Tons/Year	Estimation Method				
PM									
PM ₁₀									
SOx									
NOx		2.4	9.760	110	EDA LondCEM/AD 42				
		3.4	0,700	14.0					
Total HAPs		1 7	8 760	7.4	EPA LandGEM/AP /2				
TOLAL MAPS		1.7	0,700	7.4	EFA LanuGEIVI/AF-42				
* These emissions must schedule for maximu values were determin	st be calculated bas m limits or restricted ed. Attach calculation	sed on the request I hours of operatio ons.	ed operating sche n and/or restricted	dule and/or pro throughput. D	ocess rate, e.g., operating escribe how the emission				
2. Gas Cooling – N	OT APPLICABLE								
Water quenching	Yes 🗌 No	Water injection ra	te	GPM					
Radiation and convection	on cooling		Air dilution If yes,	☐ Yes □ _CFM	No				
Forced Draft Yes	🗌 No		Water cooled duct	work 🗌 Y	′es 🗌 No				
Other		·							
Inlet Volume	ACFM		Outlet VolumeACFM						
@°F	% Moisture		@°F _	% M	oisture				
Describe the system in	detail.								

Section C - Air Cleaning Device (Continued)									
3. Settling Chambers – NOT APPLICABLE									
Manufacturer	V 	/olume of gas handle ACF °F	d M	Gas velocity	(ft/sec.)				
Length of chamber (ft.)	Width of	chamber (ft.)	Height of chamb	oer (ft.)	Number of trays				
Water injection] No		Water injection r	rate (GPM)					
Emissions Data		T							
Inlet		Ou	tlet	R	emoval Efficiency (%)				
4. Inertial and Cyclone Col	lectors -	- NOT APPLICABLE		ľ					
Manufacturer		Туре		Model No	0.				
Pressure drop (in. of water)		Inlet volumeACFM @°F		Outlet vo	Outlet volumeACFM @°F				
Number of individual cyclone(s)			Outlet straighter	ning vanes use No	ed?				
Length of Cyclone(s) Cylinder (1	ft.)	Diameter of Cyclone(s) Cylinder (ft.)		Length o	Length of Cyclone(s) cone (ft.)				
Inlet Diameter (ft.) or duct area	(ft. ²) of cy	vclone(s)	Outlet Diameter	(ft.) or duct ar	rea (ft.²) of cyclone(s)				
If a multi-clone or multi-tube uni	t is instal	led, will any of the inc	lividual cyclones c	or cyclone tube	es be blanked or blocked off?				
Describe any exhaust gas recirculation loop to be employed.									
Attach particle size efficiency curve									
Emissions Data									
Inlet		Ou	tlet	R	emoval Efficiency (%)				

Section C - Air Cleaning Device (Continued)								
5. Fabric Collector – NO	T APPLICA	BLE						
Equipment Specifications			-					
Manufacturer			Мос	del No.		 Pressurized Design Suction Design 		
Number of Compartments		Number of Filter	s Per	⁻ Compartment	Is Bagho	ouse Insulated?		
					□ Ye	es 🗌 No		
Can each compartment be isolated for repairs and/or filter replacement?								
Are temperature controls prov	vided? (Des	cribe in detail)			□ Ye	es 🗌 No		
Dew point at maximum moist	ure	°F	I	Design inlet volume		SCFM		
Type of Fabric								
Material		Felted		🗌 Membra	ne			
Weight	_oz/sq.yd	🗌 Wover	า	Others:	List:			
Thickness	in	E Felted	-Wove	en				
Fabric permeability (clean) @	1/2" water-A	\P		CFM/sq.ft.				
Filter dimensions Length		Diamo	eter/V	Vidth				
Effective area per filter			I	Maximum operating	ı temperatı	ure (°F)		
Effective air to cloth ratio	Minimu	ım		Maximum				
Drawing of Fabric Filter A sketch of the fabric filter and temperature indicator s	showing all should be at	access doors, ca ttached.	atwalk	s, ladders and exh	aust ductw	ork, location of each pressure		
Operation and Cleaning								
Volume of gases handled		Pressure dro	p acr	oss collector (in. of	water).	_		
ACFM @	•	F	equi	pment to be used to	o monitor th	ne pressure drop.		
Type of filter cleaning Manual Cleaning Mechanical Shakers Pneumatic Shakers		Bag Collaps Sonic Clean Reverse Air	e ing Flow		Reve	rse Air Jets r:		
Describe the equipment provi	aea if ary o	oli free air is requir	ed to	r collector operation	1			
Cleaning Initiated By Timer Expected pressure drop	range	Frequency if tim	ier ac in.	tuated of water Ot	ther Specif	fy		
Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If yes, describe.								
Describe the warning/alarm system that protects against operation when the unit is not meeting design requirements.								
Emissions Data								
Pollutant		Inlet		Outlet		Removal Efficiency (%)		

Section C - Air Cleaning Device (Continued)										
6. Wet Collection Equ	6. Wet Collection Equipment – NOT APPLICABLE									
Equipment Specification	Equipment Specifications									
Manufacturer		Туре		Model No.						
Design Inlet Volume (SCF	CEM) Rolotivo Particulato/Coo Volocity (ciestor corubboro oply)									
					Sol Solubberg only					
Describe the internal feat limiters, etc.).	ures (e.g., vari	iable throat, ga	s/liquid diffusion plates,	spray nozzles	s, liquid redistributors, bed					
Describe pH monitoring ar	id pH adjustme	nt systems, if ap	pplicable.							
Describe mist eliminator or	r separator (typ	e, configuration,	backflush capability, freq	quency).						
Attach particulate size effic	ciency curve.									
Operating Parameters										
Inlet volume of gases han	dled	(ACFM)	Outlet volume of ga	ses handled _	(ACFM)					
	@	°F	@	°F	% Moisture					
Liquid flow rates. Desci recirculating solution, mak	ibe equipment eup water, blee	provided to m d flow, etc.)	neasure liquid flow rates	s to scrubber	e.g., quenching section,					
Describe scrubber liquid s etc.)	upply system (a	amount of make	-up and recirculating liqui	id, capacity of	recirculating liquid system,					
State pressure drop range (in water) across scrubber (e.g., venturi throat, packed bed, etc.) only. Describe the equipment provide to measure the pressure drop. Do not include duct or de-mister losses.										
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.										
Emissions Data										
Pollutant	l	nlet	Outlet		Removal Efficiency (%)					

Section C - Air Cleaning Device (Continued)									
7. Electrostatic Precipitator – NOT APPLICABLE									
Equipment Specification	S								
Manufacturer		Model No.			U Wet	e-Stage	☐ Dry ☐ Two-Stage		
Gas distribution grids]Yes 🗌 No		D M	esign Inlet Volume (Se laximum operating ten	CFM) nperature (°F)			
Total collecting surface are	ea	sq. ft.	Collec	tor plates size length		ft. x width	ft.		
Number of fields			Numb	er of collector plates/fi	eld				
Spacing between collector	plates	inc	hes.						
Maximum gas velocity	1	ft./sec.	Minim	um gas treatment time	e:	sec.			
Total discharge electrode Number of discharge elect	ength rodes	ft.	Numb	er of collecting electro	de rappers				
Rapper control	Vagnetic	Pneumat	tic	Other		[Describe in detail		
Operating Parameters									
Inlet gas temperature (°F)				State pressure dro	p range (in	ches water	gauge) across		
Outlet gas temperature (°	F)			collector only					
				Describe the equip	ment				
Volume of gas handled (A	CFM)			Dust resistivity (ohr	m-cm). Wi	ll resistivity	vary?		
Power requirements									
Number and size of Trans	former Rectifier	sets by ele	ctrical f	ield					
Field No.	No. of S	Sets	Ea	ch Transformer KVA	nsformer Each Rectifier A KV Ave./Peak Ma DC				
Current Density		Corona Pr	wor		Corona P	ower Dens	ity /		
Micro ampe	res/ft ² .		Wa	/atts/1000 ACFM Watts/ft ² .			'ft ² .		
Will a flue gas conditioning	ı system be em	ployed? If y	ves, des	scribe it.					
Does air cleaning device e	mploy hopper l	neaters, hop	per vib	rators or hopper level	detectors?	If yes, de	scribe.		
Describe the warning/alarr	n system that p	orotects agai	nst ope	eration when unit is no	ot meeting o	lesign requ	irements.		
Emissions Data									
Pollutant	I	nlet		Outlet		Remov	al Efficiency (%)		

Section C - Air Cleaning Device (Continued)							
8. Adsorption Equipm	nent – NOT API	PLICABLE					
Equipment Specification	S						
Manufacturer		Туре		Model No.			
Design Inlet Volume (SCF	M)	Adsorb	ent charge per adsorber	r vessel and number of adsorber vessels			
Length of Mass Transfer Z	Cone (MTZ), sup	plied by the mai	nufacturer based upon la	boratory data.			
Adsorber diameter (ft.) and	d area ft².)		Adsorption bed dep	oth (ft.)			
Adsorbent information							
Adsorbent type and physic	cal properties.						
Working capacity of adsor	bent (%)		Heel percent or u adsorbent after reg	Heel percent or unrecoverable solvent weight % in the adsorbent after regeneration.			
Operating Parameters							
Inlet volume of gases han	dled	(ACFM) @ _	°F				
Adsorption time per adsor	ption bed		Breakthrough capa Lbs. of solvent / 10	city: 0 lbs. of adsorbent =			
Vapor pressure of solvents	s at the inlet tem	perature	Available steam in applicable)	Available steam in pounds to regenerate carbon adsorber (if applicable)			
Percent relative saturation	of each solvent	at the inlet tem	perature				
Attach any additional data	including auxilia	ary equipment a	nd operation details to th	oroughly evaluate the control equipment.			
Describe the warning/alarr	n system that pr	rotects against c	peration when unit is no	t meeting design requirements.			
Emissions Data							
Pollutant	lr	nlet	Outlet	Removal Efficiency (%)			

Section C - Air Cleaning Device (Continued)						
9. Absorption Equipm	nent – NOT AP	PLICABLE				
Equipment Specification	IS					
Manufacturer		Туре			Model No	0.
Design Inlet Volume (SCF	M)	l	То	wer height (ft.) an	nd inside d	iameter (ft.)
Packing type and size (if a	pplicable)		He	ight of packing (ff	t.) (if applic	cable)
Number of trays (if applica	ble)		Nu	mber of bubble c	aps (if app	olicable)
Configuration	it 🗌] Cross flow		Cocurrent flov	w	
Describe pH and/or other	monitoring and	controls.				
Absorbent information						
Absorbent type and conce	ntration.		Re	Retention time (sec.)		
Attach equilibrium data for	absorption (if a	applicable)				
Attach any additional information recirculating, system capa and recirculation.	ormation regar city, etc.) to tho	ding auxiliary equ roughly evaluate th	ipmen ne con	t, absorption so trol equipment. I	lution sup Indicate th	ply system (once through or e flow rates for makeup, bleed
Operating Parameters						
Volume of gas handled (A	CFM) Inle	t temperature (°F)		Pressure drop (in. of water) and liquid flow rate. Describe the monitoring equipment.		
State operating range for pH and/or absorbent concentration in scrubber liquid.						
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.						
Emissions Data						
Pollutant	I	Inlet		Outlet		Removal Efficiency (%)

Section C - Air Cleaning Device (Continued)							
10. Selective Catal	ytic Reduction	(SCR)					
Selective Non-O	Selective Non-Catalytic Reduction (SNCR) NOT APPLICABLE						
Non-Selective Catalytic Reduction (NSCR)							
Equipment Specification	Manufacturer Model No.						
Manufacturer		туре		woder no.			
Design Inlet Volume (SCF	M)		Design operating te	mperature (°l	F)		
Is the system equipped w details.	ith process cor	trols for proper m	xing/control of the red	ucing agent i	n gas stream? If yes, give		
Attach efficiency and other	r pertinent infor	nation (e.g., ammo	onia slip)				
Operating Parameters							
Volume of gases handled		(ACFM) @	°F				
Operating temperature ra	nge for the SCF	R/SNCR/NSCR sy	stem (°F) From	°F	To°F		
Reducing agent used, if ar	ıy		Oxidation catalyst used, if any				
State expected range of us	sage rate and c	oncentration.					
Service life of catalyst			Ammonia slip (ppm	Ammonia slip (ppm)			
Describe fully with a sketch giving locations of equipment, controls systems, important parameters and method of operation.							
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.							
Emissions Data							
Pollutant		nlet	Outlet		Removal Efficiency (%)		

	Sectio	on C - Air C	lea	aning Device (Contir	iued)	
11. Oxidizer/Afterburne	ers – NOT APF	PLICABLE				
Equipment Specification	IS					
Manufacturer	ırer Type 🗌 Tr		Th	ermal 🗌 Catalytic	Model No.	
Design Inlet Volume (SCFM) Combustion chamber volu			n c olum	chamber dimensions (le ne, etc.)	ngth, cross-sectional area, effective	
Describe design features,	which will ensu	re mixing in c	om	bustion chamber.		
Describe method of pre applicable).	eheating incon	ning gases	(if	Describe heat exchang applicable).	er system used for heat recovery (if	
Catalyst used	Life of catalyst E a		Ex acı	pected temperature rise ross catalyst (°F)	Dimensions of bed (in inches). Height: Diameter or Width: Depth:	
Are temperature sensing of If yes, describe.	levices being p	rovided to me	easu	ure the temperature rise a	cross the catalyst? Yes No	
Describe any temperature or sketch.	sensing and/or	recording de	evice	es (including specific locat	ion of temperature probe in a drawing	
Burner Information						
Burner Manufacturer		Model No.			Fuel Used	
Number and capacity of bu	urners	Rated capa	city	r (each)	Maximum capacity (each)	
Describe the operation of t	the burner			Attach dimensioned diagram of afterburner		
Operating Parameters						
Inlet flow rate (ACFM)	@	°F		Outlet flow rate (ACFM)	@°F	
State pressure drop range across catalytic bed (in. of water).Describe the method adopted for regeneration or disposal of the used catalyst.				opted for regeneration or disposal of		
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.						
Emissions Data						
Pollutant	I	nlet		Outlet	Removal Efficiency (%)	

Section C - Air Cleaning Device (Continued)

12. Flares – NOT APPLICABLE

The landfill operates an existing enclosed ground flare for LFG control in accordance with its Title V operating permit No. 48-00027. The landfill was recently issued plan approval 48-00027C which authorizes the installation of additional flaring capacity (utility flare and second enclosed flare). LFG collected from the proposed expansion area will be routed to one (or more) of these devices permitted separately. Collected LFG may also be routed to a third-party plant for treatment and subsequent use. The plant is currently under construction and will be owned and operated in accordance with separate permits by Aria Energy East, LLC.

Equipment Specifications (N/A, No new flares that are not already permitted are proposed)								
Manufacturer		Type 🔲 Ele	vated flare er	🗌 Groui	nd flare Describe	Model No.		
Design Volume (SCFM)		Dimensions of s	Dimensions of stack (ft.) Diameter Height					
Residence time (sec.) and temperature (°F)	l outlet	Turn down ratio	Turn down ratio Burner details					
Describe the flare design (air/steam-assisted or nonassisted), essential auxiliaries including pilot flame monitor of proposed flare with a sketch.								
Describe the operation of the flare's ignition system.								
Describe the provisions to introduce auxiliary fuel to the flare.								
Operation Parameters				r				
Detailed composition of th	ne waste gas	Heat content	Exit velocity					
Maximum and average gas flow burned (ACFM) Operating temperature (°F)								
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.								
Emissions Data								
Pollutant		Inlet		Outlet	Removal E	fficiency (%)		

	Sectio	n C - Air Clea	ning Device (Conti	nued)		
13. Other Control Equi	pment – NOT	APPLICABLE				
Equipment Specification	IS	-				
Manufacturer		Туре		Model No.		
Design Volume (SCFM)			Capacity			
Describe pH monitoring ar	nd pH adjustme	nt, if any.				
Indicate the liquid flow rate	e and describe e	equipment provide	ed to measure pressure	drop and flow rate, if any.		
Attach efficiency curve and	Attach efficiency curve and/or other efficiency information.					
Attach any additional date	Attach any additional date including auxiliary equipment and operation details to thoroughly evaluate the control equipment.					
Operation Parameters						
Volume of gas handled						
AC	CFM @	°F	%1	Moisture		
Describe fully giving important parameters and method of operation.						
Describe the warning/alarm system that protects against operation when unit is not meeting design requirements.						
Emissions Data						
Pollutant	I	nlet	Outlet	Removal Efficiency (%)		

Section C - Air Cleaning Device (Continued)

14. Costs – NOT APPLICABLE

The landfill operates an existing enclosed ground flare for LFG control in accordance with its Title V operating permit No. 48-00027. The landfill was recently issued plan approval 48-00027C which authorizes the installation of additional flaring capacity (utility flare and second enclosed flare). Costs for these devices were provided in the separate permitting for these flares. No new flares that are not already permitted are proposed

Indicate cost associated with air cleaning device and its operating cost (attach documentation if necessary)

Device	Direct Cost	Indirect Cost	Total Cost	Annual Operating Cost
AF Missellenseus NO		•	-	•

15. Miscellaneous – NOT APPLICABLE

Describe in detail the removal, handling and disposal of dust, effluent, etc. from the air cleaning device including proposed methods of controlling fugitive emissions.

Attach manufacturer's performance guarantees and/or warranties for each of the major components of the control system (or complete system).

Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase air contaminant emissions.

Section D - Additional Information

Will the construction, modification, etc. of the sources covered by this application increase emissions from other sources at the facility? If so, describe and quantify.

Actual emissions from the existing LFG flare or other LFG flares (permitted separately, once installed) may increase slightly due to increased LFG flow. However, because these control devices are permitted separately at its design capacity, and because the plan approval for this expansion does not increase the design capacity of these flares, their potential-to-emit will not increase as a result of this project.

If this project is subject to any one of the following, attach a demonstration to show compliance with applicable standards. Please see the attached Addendum A.

a.	Prevention of Significant Deterioration permit (PSD), 40 CFR 52?	YES	NO 🛛
b.	New Source Review (NSR), 25 Pa. Code Chapter 127, Subchapter E?	☐ YES	NO 🛛
C.	New Source Performance Standards (NSPS), 40 CFR Part 60? (If Yes, which subpart) <u>Subpart XXX</u>	X YES	□ NO
d.	National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61? (If Yes, which subpart)	☐ YES	⊠ NO
e.	Maximum Achievable Control Technology (MACT) 40 CFR Part 63? (If Yes, which part) <u>Subpart AAAA</u>	🛛 YES	

Attach a demonstration showing that the emissions from any new sources will be the minimum attainable through the use of best available technology (BAT).

See Appendix B – Best Available Technology (BAT) Demonstration.

Provide emission increases and decreases in allowable (or potential) and actual emissions within the last five (5) years for applicable PSD pollutant(s) if the facility is an existing major facility (PSD purposes).

N/A. The facility is not an existing major source under the PSD program.

Section D - Additional Information (Continued)

Indicate emission increases and decreases in tons per year (tpy), for volatile organic compounds (VOCs) and nitrogen oxides (NOx) for NSR applicability since January 1, 1991 or other applicable dates (see other applicable dates in instructions). The emissions increases include all emissions including stack, fugitive, material transfer, other emission generating activities, quantifiable emissions from exempted source(s), etc.

		Indicate Yes		VO	Cs	NOx	
		or No if		Emission			
		emission		increases	Creditable	Emission	Creditable
		increases and		in	emission	increases	emission
		decreases		potential	decreases	in	decreases
Permit		were used		to emit	in actual	potential	in actual
number	Date	previously for			emissions	to emit	emissions
(if applicable)	issued	netting	Source I. D. or Name	(tpy)	(tpy)	(tpy)	(tpy)

Not applicable. Non-attainment NSR (NNSR) does not apply to the expansion. The potential NO_x and VOC emissions associated with the expansion do not represent a significant emissions increase per 25 PA Code 25 PA Code 3127.203a(a)(1). Further, the facility is not an existing major VOC- or NO_x-emitting facility per NNSR. Finally, the expansion does not constitute the construction of a new major source of VOC or NO_x.

If the source is subject to 25 Pa. Code Chapter 127, Subchapter E, New Source Review requirements,

- a. Identify Emission Reduction Credits (ERCs) for emission offsets or demonstrate ability to obtain suitable ERCs for emission offsets. **N/A**
- b. Provide a demonstration that the lowest achievable emission rate (LAER) control techniques will be employed (if applicable). N/A
- c. Provide an analysis of alternate sites, sizes, production processes and environmental control techniques demonstrating that the benefits of the proposed source outweigh the environmental and social costs (if applicable). **N/A**

Attach calculations and any additional information necessary to thoroughly evaluate compliance with all the applicable requirements of Article III and applicable requirements of the Clean Air Act adopted thereunder. The Department may request additional information to evaluate the application such as a standby plan, a plan for air pollution emergencies, air quality modeling, etc. **See Appendix D**

Section E - Compliance Demonstration					
Note: Complete this section if source is not a Title V facility. Title V facilities must complete Addendum A.					
NOT APPLICABLE – Source is an existing Title V facility. See Addendum A.					
Method of Compliance Type: Check all that apply and complete all appropriate sections below					
Monitoring Testing Reporting					
Recordkeeping Work Practice Standard					
Monitoring: a Monitoring device type (Parameter, CEM, etc.)					
b. Monitoring device location.					
c. Describe all parameters being monitored along with the frequency and duration of monitoring each parameter:					
Testing:					
a. Reference Test Method: Citation					
b. Reference Test Method: Description					
Recordkeeping:					
Describe what parameters will be recorded and the recording frequency:					
Reporting:					
a. Describe what is to be reported and frequency of reporting:					
b. Reporting start date:					
Work Practice Standard:					
Describe each:					

Section F - Flue and Air Contaminant Emission							
1. Estimated Atmos	pheric Emissi	ions*					
		Maxin	num emiss	ion rate			Salculation/
Pollutant	specify u	nits	lbs/hr		tons/yr.	Esti	mation Method
PM		N/A	A Contraction of the second se	N/A			
PM ₁₀		N/A	A	N/A			
SOx		N/A	A	N/A			
со		N/A	A	N/A			
NOx		N/A	A	N/A			
VOC		0.8	4	3.7		Mass bala	ance/EPA LandGEM
Others: (e.g., HAPs)			-				
Total HAPs		0.4	1	1.8		Mass bala	ance/EPA LandGEM
* These emissions mus		d based on	the reques	tod operating		d/or process	rate of operating
schedule for maximun values were determine	n limits or restr ed. Attach calc	icted hours ulations.	of operatio	n and /or res	tricted through	a/or process nput. Descril	be how the emission
2. Stack and Exhau	ster – NOT AF	PLICABLE					
Stack Designation/Num	ber						
List Source(s) or source	e ID exhausted	to this stack	K:	% of flow ex	hausted to sta	ick:	
Stack height above grad Grade elevation (ft.)	de (ft.)	Sta	ick diamete	er (ft) or Outle	t duct area (so	q. ft.)	f. Weather Cap □ YES □ NO
Distance of discharge to	o nearest prop	erty line (ft.).	Locate or	n topographic	map.		
Does stack height meet	Good Enginee	ring Practice	e (GEP)?				
If modeling (estimating) and other obstructions.	of ambient ai	r quality imp	acts is nee	eded, attach a	a site plan wit	h buildings a	and their dimensions
Location of sta	ck** ude		Latitude			Longit	ude
Point of Orig	in	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Stack oxbaust							
Volume ACF	Volume ACFM Temperature °F Moisture %						
Indicate on an attached sheet the location of sampling ports with respect to exhaust fan, breeching, etc. Give all necessary dimensions.							
Exhauster (attach fan cu	irves)		in.	of water		HP @	RPM.
** If the data and colle Application, provide th	ection method he additional de	codes differ etail requirec	from thos by that for	e provided c m on a separ	n the Genera ate form.	I Informatior	Form-Authorization

Section G - Attachments Number and list all attachments submitted with this application below: See Table of Contents.



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY

Addendum A: Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source. <u>Note:</u> A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Citation Number	Citation Limitation	Limitation Used			
40 CFR 60 Subpart XXX and 40 CFR 63 Subpart AAAA	Control of MSW landfill NMOC emissions	N/A			
25 PA Code §127.12(a)(5)	Incorporates Best Available Technology (BAT) Standards for Fugitive Dust Control	N/A			


COMMONWEALTH OF PENSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY

ADDENDUM 1 METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT
Federal Tax ID 22-3575227
Firm Name Bethlehem Landfill Company
Plant Code 1
Plant Name Bethlehem Landfill
Applicable Requirement for: (check only one)
Entire Site
Group of Sources Group ID
Single Source Unit ID
Alternative Operating Scenario Name Scenario
Citation No. 40 CFR 60 Subpart XXX and 40 CFR 63 Subpart AAAA
Compliance Method Based Upon 🛛 Applicable Requirement 🗌 CAM 🔲 Other
Method of Compliance Type: [check all that apply and complete all appropriate section(s)]
Monitoring 🗌 Testing 🛛 Reporting
🖾 Record Keeping 🛛 Work Practice Standard
SECTION B. MONITORING
Monitoring Device Type (stack test, CEM, etc.) LFG wellhead monitoring; monitoring of surface methane emissions
Monitoring Device Location Individual gas collection wellheads; SEM monitoring in a serpentine pattern
Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.
Wellhead monitoring (monthly for gauge pressure, oxygen and temperature); SEM (quarterly) for methane.
How will data be reported? Semi-annual per 40 CFR 63.1981(h)
SECTION C. TESTING
Reference Test Method Description N/A
Reference Test Method Citation N/A

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Required Record-Keeping	Duration Record Must Be Maintained
Design capacity report	5 years
Current amount of solid waste in-place	5 years
Year-by-year waste acceptance rate	5 years
Maximum expected gas generation flow rate	Lifetime of GCCS
Density of wells, horizontal collectors, surface collectors, and other gas extraction devices.	Lifetime of GCCS
Installation date of all newly installed wells	Lifetime of GCCS
Plot map showing each existing and planned collector	Lifetime of GCCS
Records of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from the gas collection system and any non-productive areas	Lifetime of GCCS
Records of exceedances of operational monitoring standards	5 years
Root cause analyses	5 years
Corrective action analyses	5 years
Periods of GCCS downtime	5 years
Date, time, duration of each startup/shutdown period	5 years
Records per §63.1983(c)(7)	5 years
Records per §63.1983(e)	5 years
Records of GCCS monitoring data for parameters	5 years
Per Table 1 to Part 63 Subpart AAAA	As Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

- Value and length of time for exceedances of applicable parameters monitored.
- Description and duration of all periods when the gas stream was diverted from the control device or treatment system through a bypass line or the indication of bypass flow.
- Description of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating.
- All periods when the collection system was not operating.
- Location and value of each SEM exceedance.
- Date and location of each well or collection system expansion added to the GCCS.
- Root cause analysis for any corrective action analysis for which corrective actions are required and that take more than 60 days to correct the exceedance.
- Results of enhanced wellhead temperature monitoring.

The above reporting shall be semi-annual

Additional reporting as follows

- Submit a revised GCCS Design Plan:
 - At least 90 days prior to expanding operations to an area not covered by the previously approved design plan.
 - Prior to expanding the gas system in a way that is not consistent with the existing design plan.
- Submit a closure report within 30 days of waste acceptance cessation.
- Submit an equipment removal report 30 days prior to removal or cessation of operation of the control equipment.
- Submit corrective action and corresponding timeline per §63.1981(j)
- Submit 24-hour high temperature report per §63.1981(k).

Reporting Start Date Per current semi-annual reporting schedule.

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

The landfill and gas collection and control system shall be operated in accordance with 40 CFR §60.760–60.769 and 40 CFR §63.1930–1990.



COMMONWEALTH OF PENSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY

ADDENDUM 1 METHOD OF COMPLIANCE WORKSHEET

	SECTION A. APPLICABLE REQUIREMENT				
Federal Tax ID	22-3575227				
Firm Name	Bethlehem Landfill Company				
Plant Code	1				
Plant Name	Bethlehem Landfill				
Applicable Req	uirement for: (check only one)				
Entire Sit	e				
Group of	Sources Group ID				
Single So	ource Unit ID				
Alternativ	re Operating Scenario Scenario Name				
Citation No.	25 PA code §127.12(a)(5) Best Available Technology – Fugitive PM Control				
Compliance Me	thod Based Upon 🛛 Applicable Requirement 🗌 CAM 🔲 Other				
Method of Com	pliance Type: [check all that apply and complete all appropriate section(s)]				
Monitorin	g Testing Reporting				
Record K	Ceeping 🛛 Work Practice Standard				
	SECTION B. MONITORING				
Monitoring Dev	ice Type (stack test, CEM, etc.) N/A				
Monitoring Dev	ice Location N/A				
Describe all par	ameters being monitored along with the frequency and duration of monitoring each parameter.				
N/A					
How will data b	e reported? N/A				
	SECTION C. TESTING				
Reference Test	Method Description N/A				
Reference Test	Method Citation N/A				
	SECTION D. RECORD KEEPING				
Describe what	parameters will be recorded and the frequency of recording.				
Records descri DEP personnel	bing those fugitive dust control activities that were undertaken should be maintained for on-site review by for a period of 5 years and should include the following:				
 A writter 	 A written manual documenting the best management practices (BMPs) utilized to minimize fugitive particulate matter emissions. 				
Record	s, as appropriate, which demonstrate that the BMPs are being implemented.				
	SECTION E. REPORTING				
Describe what i	s to be reported and the frequency of reporting.				
N/A					
Reporting Start	Date N/A				

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

The landfill will take all reasonable actions to prevent particulate matter from becoming airborne through the development and implementation of best management practices (BMPs). The BMPs will be based on actual site conditions and will be appropriate for the landfill. The landfill shall develop a written manual documenting the site-specific BMPs utilized to control fugitive particulate matter.

APPENDIX A

Potential Emission Calculations

1 LANDFILL GAS GENERATION AND EMISSION ESTIMATES

This section addresses the estimates of "Pre-Control" and "Post-Control (Potential)" emissions from the proposed "Northern Realignment" expansion of the Bethlehem Landfill, and includes sections addressing LFG modeling results and estimated pre-control and post-control potential emission of pollutants from the landfill expansion.

The calculations are based on the following:

- Based on the current design capacity, it is anticipated that the current disposal areas would reach capacity by approximately 2024, assuming a filling rate of 429,000 tons per year (1,375 tons per day). Thus, it is assumed that filling of the landfill expansion will begin in 2024.
- The proposed landfill expansion represents an additional 2,304,900 yd³ (CY) of net volumetric MSW disposal capacity. For potential emission purposes, it is assumed that MSW is filled at a density of 0.75 tons/yd³. The assumed density of 0.75 tons/yd³ is a reasonable and generally conservative assumption for air emission purposes. However, if a higher density is achieved, the total mass of waste disposed may increase over the lifetime of the expansion but the total maximum mass disposed in any year will remain fixed at 429,000 tons per year.
- MSW is filled at the maximum allowable average rate of 1,375 tons per day, for 312 days of operation per year. The actual disposal rate may be less, resulting in a slightly longer life span; however, for purposes of estimating the emissions, a rate of 1,375 tons per day is used and this assumption results in the highest potential peak gas generation and emission rate.

LANDFILL GAS MODELING

Modeling Approach

SCS estimated landfill gas generation rates using the US EPA's Landfill Gas Emissions Model (LandGEM). The LandGEM uses a first-order decay equation to project the annual generation of landfill gas based on the total quantity of waste buried at the beginning of the year and the following modeling coefficients:

- Quantity of waste disposed on an annual basis (megagrams, Mg)
- Methane generation potential, L₀ (cubic meters methane per Mg waste, m³/Mg)
- Methane generation rate constant, k (yr-1)
- Methane concentration as generated (assumed to be 50 percent)

The following summarizes the modeling coefficients and assumptions used for the model:

- <u>Refuse Filling History and Projections</u>: SCS used historical waste filling rates reported by the landfill through 2021. Future disposal rates are assumed to be at 429,000 tons per year. For LFG modeling purposes and calculating emissions from the proposed expansion, it is assumed that filling of the landfill expansion will begin in 2024.
- <u>Methane Recovery Potential, L₀ (m³ CH₄, per Mg waste): a value of 100 m³/Mg is used, as recommended by the EPA and published in EPA's AP-42 guidance document (Section 2-4).</u>

- <u>LFG Decay Rate Constant, k:</u> A value of 0.04 yr⁻¹ is used, as recommended by the EPA and published in AP-42 (Section 2-4).
- <u>Methane Content</u>: a methane content of 50 percent by volume is assumed.
- <u>NMOC Concentration (ppmv as hexane)</u>: the EPA's AP-42 default NMOC concentration of 595 ppmv is used along with the EPA direction that VOCs are 39% of total NMOCs.
- <u>Safety Factor:</u> 1.4. Because the parameters which affect LFG generation can vary over time due to changing conditions, meteorological or environmental factors, or other reasons, a safety factor (SF) is applied to the modeling results.

Modeling Results

Three LFG models were developed: the landfill expansion, the existing landfill, and the existing landfill plus landfill expansion. The modeling results are provided in the attached **Table A-2**, **Table A-3**, and **Table A-4**. The modeling results for the landfill expansion are used as a basis to calculate potential emissions from this area.

Based on the modeling results, it is expected that the maximum sitewide LFG generation rate (including the existing permitted disposal areas and the proposed expansion) will occur in 2029 and will be approximately 4,827 scfm, assuming an LFG methane content of 50 percent by volume. Note that the modeling results include a safety factor to be conservative. After 2029, the model indicates that the LFG generation rate will decline as the organic fraction in the MSW is depleted.

The landfill currently operates an active GCCS in accordance with its Title V operating permit. The GCCS will collect LFG from the landfill expansion area in accordance with the permit and applicable regulations (e.g., NSPS Subpart XXX, NESHAP Subpart AAAA). Collected LFG is currently routed to an existing enclosed ground flare owned and operated by the landfill and which is operated in accordance with the Title V operating permit. The landfill's existing enclosed ground flare is rated to control up to 127 MMBtu/hr heat input (about 4,200 cfm at 50 percent methane content). Using the conservative assumptions discussed herein, the modeling results suggest that gas flows and methane recovery may exceed the capacity of the landfill's current existing flare in the future. Based on the current modeling results, it is estimated that the flare has sufficient capacity to handle projected LFG collection through at least 2022.

The landfill recently applied for and was issued plan approval 48-00027C which authorizes the installation of additional flaring capacity (utility flare and second enclosed flare). Therefore, in the future, collected LFG may also be routed to the utility flare and/or second enclosed ground flare which will be installed, if necessary. The landfill monitors LFG flows in accordance with its Title V operating permit and regularly updates its LFG model and recovery projections. In the event that gas flows and/or updated LFG model projections indicate that additional control capacity will be required, the landfill is required by federally-enforceable provisions of its Title V operating permit to install additional control capacity.

In the future, collected LFG may also be routed to a third-party plant for treatment and subsequent use. The plant is currently under construction and will be owned and operated in accordance with separate permits by Aria Energy East, LLC.

ESTIMATED EMISSIONS – LANDFILL EXPANSION

SCS estimated "Pre-Control" and "Post-Control (Potential)" emissions for the landfill expansion. Pollutants which are emitted fugitively from the landfill include volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). The emission rate of these pollutants is based on the concentration of the pollutant(s) in the LFG as well as the rate of LFG generation, which varies over time based on the quantity of waste buried, its age, and other factors.

As mentioned above, the landfill operates an active gas collection and control system to control fugitive LFG emissions in accordance with its Title V operating permit. The calculations for "Pre-Control Emissions" from the landfill expansion assume that none of the LFG generated is collected and delivered to an LFG control or treatment device (i.e., 100 percent of gas generated is emitted to the atmosphere). The calculations for "Post-Control/Potential Emissions" from the landfill expansion assume that 75 percent of gas generated is collected and delivered to an LFG control or treatment device (i.e., 25 percent of gas generated is emitted to the atmosphere).

VOC and HAP emissions are estimated based on the following assumptions and factors:

- 1. NMOC concentration is based on EPA's AP-42 recommended default value of 595 parts per million (ppm), a conservative assumption
- 2. VOC content is 39 percent of total NMOC content, per the EPA's AP-42 (Section 2-4).
- 3. HAP emissions are estimated using default concentrations published in the EPA's AP-42. This is a conservative approach in that the values published in AP-42 are typically higher than site-specific HAP concentrations at modern landfills. This is also conservative in that the ratio of HAPs to total NMOC concentration is typically lower at modern landfill than published in AP-42, and the total NMOC concentration is typically lower at modern landfills than published in AP-42.

SCS estimated landfill gas, NMOC, and VOC generation rates from the landfill expansion using the US EPA's LandGEM and the conservative assumptions discussed herein. The attached **Table A-3** provides a summary of the modeling results for the landfill expansion.

Table A-1 summarizes Pre-Control and Potential (Post-Control) VOC and HAP emissions for the landfillexpansion.

Compound	Emission Rate, Year 2029 (ton/year)
Pre-Control Emission of VOCs (assumes 0% collection efficiency)	14.8
Potential Emission of VOCs (assumes 75% collection efficiency)	3.7
Pre-Control Emission of Total HAPs (assumes 0% collection efficiency)	7.4
Potential Emission of Total HAPs (assumes 75% collection efficiency)	1.8

Table A-1 - Summary of Fugitive Emissions: Landfill Expansion (tpy)

Sample HAP Calculation

The following is a sample calculation for the emissions of the HAP, toluene. The calculation is based on procedures outlined in the EPA's AP-42 (Section 2-4) and the projected maximum LFG generation rate for the landfill expansion of 1,085 scfm anticipated to occur in 2029. Emissions for other HAPs are estimated in a similar manner.

Volume Flowrate of Toluene

$$\left(\frac{1,085 \ ft^3 \ LFG}{min}\right) \left(\frac{525,600 \ min}{yr}\right) \left(\frac{1 \ m^3}{35.3 \ ft^3}\right) \left(\frac{39.3 \ m^3 toluene}{1,000,000 \ m^3 toluene}\right) = \frac{634.9 \ m^3 toluene}{year}$$

Mass Flowrate of Toluene

$$=\frac{\left(\frac{92.13 \ g}{mol}\right)(1 \ atm)\left(\frac{634.9 \ m^{3} toluene}{year}\right)\left(\frac{2.2 \ lbs}{kg}\right)\left(\frac{1 \ ton}{2,000 \ lbs}\right)}{\left(\frac{8.205 * 10^{-5}m^{3} * atm}{mol * K}\right)(298 \ K)\left(\frac{1,000 \ g}{kg}\right)} * (1 - 0.75 \ collection \ efficiency)$$

= 0.7 tons toluene/year

GREENHOUSE GAS EMISSIONS

In 2010, the US EPA published Federal regulations imposing permitting requirements on stationary sources that emit greenhouse gases (GHGs) above applicable thresholds. This rule, known as the Tailoring Rule, requires applicable sources to comply with permitting requirements under the new source permitting program.

In November 2014, the EPA released a guidance document titled "Framework for Assessing Biogenic CO2 Emission from Stationary Sources" ("EPA Framework") and an accompanying memorandum titled "Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources" ("Guidance Memo"), addressing how it intends to handle the issue of biogenic CO2 in both the Clean Power Plan and the PSD program. The EPA Framework and Guidance Memo indicated that all CO2 from LFG is biogenic and does not contribute to a net atmospheric increase in CO2 levels, and that EPA believed that such emissions should be exempt from PSD's Best Available Control Technology requirements. The Guidance Memo specifically recommended that these documents be shared with its co-regulators.

In most cases, fugitive emissions are not included in calculations to determine major source emission levels under federal PSD rules. Fugitive emissions are "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening". The EPA addressed the issue of landfill fugitive emission in its October 3, 1994 memo "Classification of Emissions from Landfills for NSR Applicability Purposes". In this memo, EPA concludes that "it is no longer appropriate to conclude generally that landfill gas could not reasonably be collected at a … landfill project that does not include a gas collection system". Because the landfill operates a comprehensive GCCS in accordance with the EPA's NSPS and MACT standards, it can be concluded that the landfill will collect all LFG that could "reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening". Therefore, any raw "Post-Control" LFG emitted from the landfill is considered fugitive.

Table A-6 and **Table A-7** summarize the estimated Pre-Control and Post-Control GHG emissions fromthe landfill expansion. These emissions are provided for completeness and for information only.

Table A-2: LFG and VOC Generation Rate Model - Existing Landfill Bethlehem Landfill Company

									VOC
	Disposal	Refuse	Disposal	Refuse	LFG Generati	on	LFG Ger	neration	Generation
	Rate	In-Place	Rate	In-Place			(With Safe	ty Factor)	Rate
Year	(tons/yr)	(tons)	(Mg/yr)	(Mg)	(scfm)	(m ³ /min)	(scfm)	(m ³ /min)	(tons/yr)
1954	43,189	0	39,180	0	0	0.0	0	0	0.0
1955	43,200	43,189	39,190	39,180	21	0.6	29	1	0.4
1956	43,244	86,388	39,230	78,370	41	1.2	57	2	0.8
1957	43,100	129,632	39,100	117,600	60	1.7	84	2	1.1
1958	43.211	172.732	39.200	156.700	78	2.2	109	3	1.5
1959	43.211	215.943	39.200	195.900	96	2.7	134	4	1.8
1960	43.211	259,153	39.200	235.100	113	3.2	158	4	2.2
1961	43.211	302.364	39.200	274.300	129	3.7	181	5	2.5
1962	43 211	345 574	39,200	313 500	145	4 1	203	6	2.8
1963	43.100	388,785	39.100	352,700	160	4.5	224	6	3.1
1964	43 211	431 885	39,200	391 800	174	4.9	244	7	3.3
1965	43 211	475.096	39,200	431,000	188	5.3	263	7	3.6
1966	43,211	518 307	39,200	470,200	202	5.7	200	8	3.0
1967	43,211	561 517	39,200	509.400	202	6.1	300	8	4.1
1968	43,211	604 728	39,200	548,600	214	6.4	317	9	4.1
1969	43,211	647.938	39,200	587 800	221	6.8	33/	9	4.5
1909	43,100	601.020	39,100	626,000	259	7.1	354	10	4.0
1970	43,211	724 249	39,200	666 100	250	7.1	350	10	4.0
1971	43,211	777.460	39,200	705 200	201	7.4	300	11	5.0
1972	43,211	820.671	39,200	703,300	271	8.0	30/	11	5.2
1074	43,211	020,071 962 004	39,200	792 700	201	0.0	334	10	5.4
1075	43,211	007,000	39,200	183,100	291	0.2 0 F	408	12	5.6 E 7
1070	43,100	907,092	39,100	822,900	301	0.5 0.0	421	12	5./
19/6	43,211	950,192	39,200	862,000	309	8.8	433	12	5.9
1977	43,211	993,403	39,200	901,200	318	9.0	445	13	6.1
1978	43,211	1,036,613	39,200	940,400	326	9.2	457	13	6.2
1979	43,431	1,079,824	39,400	979,600	334	9.5	468	13	6.4
1980	41,888	1,123,255	38,000	1,019,000	342	9.7	479	14	6.5
1981	41,888	1,165,143	38,000	1,057,000	349	9.9	488	14	6.7
1982	41,888	1,207,031	38,000	1,095,000	355	10.1	497	14	6.8
1983	41,888	1,248,918	38,000	1,133,000	361	10.2	506	14	6.9
1984	41,888	1,290,806	38,000	1,171,000	367	10.4	514	15	7.0
1985	41,888	1,332,694	38,000	1,209,000	373	10.6	522	15	7.1
1986	41,888	1,374,582	38,000	1,247,000	378	10.7	530	15	7.2
1987	67,241	1,416,470	61,000	1,285,000	384	10.9	537	15	7.3
1988	67,241	1,483,711	61,000	1,346,000	401	11.4	561	16	7.7
1989	67,241	1,550,952	61,000	1,407,000	417	11.8	584	17	8.0
1990	58,422	1,618,193	53,000	1,468,000	433	12.3	607	17	8.3
1991	58,422	1,676,615	53,000	1,521,000	444	12.6	622	18	8.5
1992	59,525	1,735,038	54,000	1,573,999	455	12.9	637	18	8.7
1993	0	1,794,562	0	1,627,999	466	13.2	652	18	8.9
1994	0	1,794,562	0	1,627,999	448	12.7	627	18	8.5
1995	95,901	1,794,562	87,000	1,627,999	430	12.2	602	17	8.2
1996	85,980	1,890,463	78,000	1,714,999	459	13.0	643	18	8.8
1997	117,947	1,976,444	107,000	1,792,999	482	13.7	675	19	9.2
1998	138,891	2,094,391	126,000	1,899,999	520	14.7	728	21	9.9
1999	177,472	2,233,282	161,000	2,025,999	566	16.0	793	22	10.8
2000	234,549	2,410,754	212,779	2,186,999	629	17.8	881	25	12.0
2001	233,906	2,645,303	212,196	2,399,779	717	20.3	1,004	28	13.7
2002	235,899	2,879,209	214,004	2,611,974	801	22.7	1,122	32	15.3
2003	356,357	3,115,108	323,282	2,825,978	883	25.0	1,237	35	16.9
2004	431,022	3,471,465	391,017	3,149,260	1,020	28.9	1,428	40	19.5
2005	424,074	3,902,487	384,713	3,540,277	1,187	33.6	1,661	47	22.7
2006	428,615	4,326,561	388,833	3,924,990	1,344	38.0	1,881	53	25.7
2007	428,932	4,755,176	389,121	4,313,823	1,497	42.4	2,095	59	28.6
2008	426.122	5,184.108	386.571	4,702.944	1,644	46.5	2,301	65	31.4
2009	420.517	5,610.230	381.487	5.089.515	1.784	50.5	2,498	71	34.1
2010	423.219	6.030.748	383.938	5.471.002	1.916	54.3	2.682	76	36.6
2011	433.364	6,453.967	393.141	5,854.940	2,044	57.9	2,861	81	39.0
2012	439.551	6.887.331	398.754	6,248.081	2,172	61.5	3.041	86	41.5
2013	405.329	7,326.882	367.708	6,646,835	2.298	65.1	3.217	91	43.9
2014	364.349	7,732.210	330.532	7.014.543	2,402	68.0	3,363	95	45.9
2015	259 875	8.096 559	235 755	7.345 075	2,483	70.3	3,476	98	47.4
2016	228 267	8 356 434	207.080	7 580 829	2,510	71.1	3,514	100	48.0
2017	356.072	8 584 701	323 023	7 787 910	2,510	71.4	3,530	100	48.2
2011	410.053	8 940 773	371 00/	8 110 933	2,521	73.4	3,550	103	
2010	303 700	9350 926	357 021	8 / 82 027	2,555	76.1	3,031	107	51 /
2020	357 027	9,330,620	32/ 715	9 840 159	2,009	78.5	3,104	110	52.4
2020	112 615	10 102 542	324,713	0,040,100	2,112	10.0	3,001	110	53.0
2021	413,013	10,102,543	310,220	9,104,8/3	2,030	00.3	3,303	112	04.∠ EE 0
2022	429,000	10,015,158	389,182	9,540,098	2,923	82.8 95.2	4,092	110	55.8
2023	429,000	10,945,158	309,182	9,929,280	3,014	80.3	4,220	100	57.0
2024	326,000	11,374,158	295,742	10,318,462	3,102	87.8	4,342	123	59.3
2025	0	11.700.158	0	10.614.205	3.137	88.8	4.391	124	59.9

Methane Content of LFG Adjusted to:

Selected Decay Rate Constant (k):

Selected Ultimate Methane Recovery Rate (Lo): NMOC Concentration in LFG:

50% 0.040

100 m³/Mg 595 ppmv as Hexane

Safety Factor

1.4

Table A-3: LFG and VOC Generation Rate Model - Northern Realignment Only Bethlehem Landfill Company

	Disposal <u>Rate</u>	Refuse In-Place	Disposal <u>Rate</u>	Refuse In-Place	LFG Generation		LFG Generation (With Safety Factor)		VOC Generation <u>Rate</u>
Year	(tons/yr)	(tons)	(Mg/yr)	(Mg)	(scfm)	(m ³ /min)	(scfm)	(m ³ /min)	(tons/yr)
2024	103,000	0	93,440	0	0	0.0	0	0	0.0
2025	429,000	103,000	389,182	93,440	49	1.4	69	2	0.9
2026	429,000	532,000	389,182	482,622	253	7.2	355	10	4.8
2027	429,000	961,000	389,182	871,804	449	12.7	629	18	8.6
2028	338,675	1,390,000	307,241	1,260,987	638	18.1	893	25	12.2
2029	0	1,728,675	0	1,568,228	775	22.0	1,085	31	14.8
2030	0	1,728,675	0	1,568,228	745	21.1	1,043	30	14.2
2031	0	1,728,675	0	1,568,228	716	20.3	1,002	28	13.7
2032	0	1,728,675	0	1,568,228	688	19.5	963	27	13.1
2033	0	1,728,675	0	1,568,228	661	18.7	925	26	12.6
2034	0	1,728,675	0	1,568,228	635	18.0	889	25	12.1
2035	0	1,728,675	0	1,568,228	610	17.3	854	24	11.7
2036	0	1,728,675	0	1,568,228	586	16.6	820	23	11.2
2037	0	1,728,675	0	1,568,228	563	15.9	788	22	10.8
2038	0	1,728,675	0	1,568,228	541	15.3	757	21	10.3
2039	0	1,728,675	0	1,568,228	520	14.7	728	21	9.9
2040	0	1,728,675	0	1,568,228	499	14.1	699	20	9.5

Methane Content of LFG Adjusted to: Selected Decay Rate Constant (k):

Selected Ultimate Methane Recovery Rate (Lo): NMOC Concentration in LFG:

Safety Factor

50% 0.040

100 m³/Mg

595 ppmv as hexane

1.4

Table A-4: LFG and VOC Generation Rate Model - Existing Landfill And Northern Realignment Bethlehem Landfill Company

	Disposal Rate	Refuse In-Place	Disposal Rate	Refuse In-Place	LFG Genera	ation	LFG Gene (With Saf	ration Rate ety Factor)	VOC Generation <u>Rate</u>
Year	(tons/yr)	(tons)	(Mg/yr)	(Mg)	(scfm)	(m ³ /min)	(scfm)	(m ³ /min)	(tons/yr)
1954	43,189	0	39,180	0	0	0.0	0	0	0.0
1955	43,200	43,189	39,190	39,180	21	0.6	29	1	0.4
1956	43,244	86,388	39,230	78,370	41	1.2	57	2	0.8
1957	43,100	172 732	39,100	117,600	78	2.2	109	2	1.1
1959	43,211	215,943	39,200	195,900	96	2.7	134	4	1.8
1960	43,211	259,153	39,200	235,100	113	3.2	158	4	2.2
1961	43,211	302,364	39,200	274,300	129	3.7	181	5	2.5
1962	43,211	345,574	39,200	313,500	145	4.1	203	6	2.8
1963	43,100	388,785	39,100	352,700	160	4.5	224	6	3.1
1964	43,211	431,885	39,200	391,800	174	4.9	244	7	3.3
1965	43,211	475,096 518 307	39,200	431,000	202	5.3	203	1	3.0
1900	43,211	561 517	39,200	509 400	202	61	300	8	4.1
1968	43,211	604,728	39,200	548,600	227	6.4	317	9	4.3
1969	43,100	647,938	39,100	587,800	239	6.8	334	9	4.6
1970	43,211	691,039	39,200	626,900	250	7.1	350	10	4.8
1971	43,211	734,249	39,200	666,100	261	7.4	365	10	5.0
1972	43,211	777,460	39,200	705,300	271	7.7	380	11	5.2
1973	43,211	820,671	39,200	744,500	281	8.0	394	11	5.4
1974	43,211	907.092	39,200	822 900	291	0.2	406	12	5.0
1976	43,211	950.192	39,200	862.000	309	8.8	433	12	5.9
1977	43,211	993,403	39,200	901,200	318	9.0	445	13	6.1
1978	43,211	1,036,613	39,200	940,400	326	9.2	457	13	6.2
1979	43,431	1,079,824	39,400	979,600	334	9.5	468	13	6.4
1980	41,888	1,123,255	38,000	1,019,000	342	9.7	479	14	6.5
1981	41,888	1,165,143	38,000	1,057,000	349	9.9	488	14	6.7
1982	41,888	1,207,031	38,000	1,095,000	355	10.1	497	14	6.8
1983	41,888	1,248,918	38,000	1,133,000	361	10.2	506	14	6.9
1985	41,888	1,230,000	38,000	1 209 000	373	10.4	522	15	7.1
1986	41,888	1,374,582	38,000	1,247,000	378	10.7	530	15	7.2
1987	67,241	1,416,470	61,000	1,285,000	384	10.9	537	15	7.3
1988	67,241	1,483,711	61,000	1,346,000	401	11.4	561	16	7.7
1989	67,241	1,550,952	61,000	1,407,000	417	11.8	584	17	8.0
1990	58,422	1,618,193	53,000	1,468,000	433	12.3	607	17	8.3
1991	58,422	1,676,615	53,000	1,521,000	444	12.6	622	18	8.5
1992	59,525	1,735,038	54,000	1,573,999	455	12.9	637	18	8.7
1993	0	1,794,562	0	1,627,999	400	12.2	627	18	8.5
1995	95.901	1,794,562	87.000	1.627.999	430	12.2	602	10	8.2
1996	85,980	1,890,463	78,000	1,714,999	459	13.0	643	18	8.8
1997	117,947	1,976,444	107,000	1,792,999	482	13.7	675	19	9.2
1998	138,891	2,094,391	126,000	1,899,999	520	14.7	728	21	9.9
1999	177,472	2,233,282	161,000	2,025,999	566	16.0	793	22	10.8
2000	234,549	2,410,754	212,779	2,186,999	629	17.8	881	25	12.0
2001	233,906	2,645,303	212,196	2,399,779	/1/	20.3	1,004	28	13.7
2002	255,899	3 115 108	323 282	2,011,974	883	25.0	1 237	32	16.9
2003	431.022	3,471,465	391.017	3.149.260	1.020	28.9	1.428	40	19.5
2005	424,074	3,902,487	384,713	3,540,277	1,187	33.6	1,661	47	22.7
2006	428,615	4,326,561	388,833	3,924,990	1,344	38.0	1,881	53	25.7
2007	428,932	4,755,176	389,121	4,313,823	1,497	42.4	2,095	59	28.6
2008	426,122	5,184,108	386,571	4,702,944	1,644	46.5	2,301	65	31.4
2009	420,517	5,610,230	381,487	5,089,515	1,784	50.5	2,498	/1	34.1
2010	433 364	6,453,967	393 141	5,854 940	2 044	57 Q	2,002	81	39.0
2012	439.551	6,887.331	398.754	6,248.081	2,044	61.5	3,041	86	41.5
2013	405,329	7,326,882	367,708	6,646,835	2,298	65.1	3,217	91	43.9
2014	364,349	7,732,210	330,532	7,014,543	2,402	68.0	3,363	95	45.9
2015	259,875	8,096,559	235,755	7,345,075	2,483	70.3	3,476	98	47.4
2016	228,267	8,356,434	207,080	7,580,829	2,510	71.1	3,514	100	48.0
2017	356,072	8,584,701	323,023	/,/87,910	2,521	/1.4	3,530	100	48.2
2018	410,053 393 780	0,940,773	371,994	8,110,933	2,593	76.1	3,031	107	49.5
2020	357.937	9,744,606	324.715	8,840.158	2,009	78.5	3.881	110	53.0
2021	413,615	10,102,543	375,225	9,164,873	2,835	80.3	3,969	112	54.2
2022	429,000	10,516,158	389,182	9,540,098	2,923	82.8	4,092	116	55.8
2023	429,000	10,945,158	389,182	9,929,280	3,014	85.3	4,220	119	57.6
2024	429,000	11,374,158	389,182	10,318,462	3,102	87.8	4,342	123	59.3
2025	429,000	11,803,158	389,182	10,707,645	3,186	90.2	4,460	126	60.9
2026	429,000	12,232,158	389,182	11,096,827	3,267	92.5	4,574	130	62.4
2027	429,000	12,661,158	389,182	11,486,009	3,345	94.7	4,683	133	63.9
2028	338,675	13,090,158	307,241	12,875,191	3,420	96.8	4,/8/	136	65.3
2029	0	13.428.833	0	12,182,432	3,440	93.8	4,638	131	63.3
	. ~	,,000	. ~	,102,702	0,020	00.0	.,000		
Methane Selected	Content of LFG Decay Rate Co	i Adjusted to: nstant (k):		50% 0.040					

Selected Ultimate Methane Recovery Rate (Lo): NMOC Concentration in LFG: Safety Factor

100 m³/Mg 595 ppmv as Hexane 1.4

Table A-5: Bethlehem Landfill Company Northern Realignment Hazardous Air Pollutant (HAP) Potential Emission Rate Calculations

			HAP Emissions				
			Pre-C	ontrol	Post-Control	Potential	
		Conc.	Emis	Emissions		ions	
HAP	MW	(ppmv)	(lb/yr)	(tpy)	(lb/yr)	(tpy)	
1,1,1-trichloroethane ¹	133.42	0.48	93.1	0.1	23.3	0.0	
1,1,2,2-tetrachloroethane ¹	167.85	1.11	270.8	0.1	67.7	0.0	
1,1-dichloroethane ¹	98.97	2.35	338.1	0.2	84.5	0.0	
1,1-dichloroethene ¹	96.94	0.20	28.2	0.0	7.0	0.0	
1,2-dichloroethane ¹	98.96	0.41	59.0	0.0	14.7	0.0	
1,2-dichloropropane ¹	112.99	0.18	29.6	0.0	7.4	0.0	
acrylonitrile ¹	53.06	6.33	488.2	0.2	122.1	0.1	
benzene ¹	78.11	1.91	216.9	0.1	54.2	0.0	
carbon disulfide ¹	76.13	0.58	64.2	0.0	16.0	0.0	
carbon tetrachloride ¹	153.84	0.00	0.9	0.0	0.2	0.0	
carbonyl sulfide ¹	60.07	0.49	42.8	0.0	10.7	0.0	
chlorobenzene ¹	112.56	0.25	40.9	0.0	10.2	0.0	
chloroethane ¹	64.52	1.25	117.2	0.1	29.3	0.0	
chloroform ¹	119.39	0.03	5.2	0.0	1.3	0.0	
chloromethane ¹	50.49	1.21	88.8	0.0	22.2	0.0	
dichlorobenzene ¹	147.00	0.21	44.9	0.0	11.2	0.0	
dichloromethane ¹	84.94	14.30	1,765.6	0.9	441.4	0.2	
ethylbenzene ¹	106.16	4.61	711.4	0.4	177.8	0.1	
ethylene dibromide ¹	187.88	0.001	0.3	0.0	0.1	0.0	
hexane ¹	86.18	6.57	823.0	0.4	205.8	0.1	
hydrogen sulfide ²	34.10	500.00	24,783.5	12.4	6,195.9	3.1	
mercury (total) ¹	200.61	2.92E-04	0.1	0.0	0.0	0.0	
methyl isobutyl ketone ¹	100.16	1.87	272.3	0.1	68.1	0.0	
perchloroethylene ¹	165.83	3.73	899.1	0.5	224.8	0.1	
toluene ¹	92.13	39.30	5,263.0	2.6	1,315.7	0.7	
trichloroethylene ¹	131.40	2.82	538.6	0.3	134.7	0.1	
vinyl chloride ¹	62.50	7.34	666.8	0.3	166.7	0.1	
xylenes ¹	106.16	12.10	1,867.2	0.9	466.8	0.2	
			Total:	7.4	Total:	1.8	

Fugitive Landfill Emission Data:		
LFG Generation Rate (cfm) =	1,085	[see Table A-3]
GCCS Collection Efficiency (%) =	75%	

Notes:

1. Concentration from EPA's AP-42.

2. Hydrogen sulfide is not a HAP thus is not included in the total HAPs. H_2S is based on site testing data with a conservative safety factor.

		Pollutant				
		Emis	<u>sions</u>	GHG En	nissions	
Source	GHG	(metric tons)	(tpy)	<u>GWP (CO2eq)</u>	(tCO2eq/yr)	Comments
Landfill Expansion Landifll Expansion Landfill Expansion Landfill Expansion	Methane (CH4) Nitrous Oxide (N2O) Carbon Dioxide (CO2) in uncaptured LFG Carbon Dioxide (CO2) from CH4 oxidation	4,928.3 n/a 10,510.3 1,505.9	5,430.9 n/a 11,582.3 1,659.5	25 298 1 1	135,773.6 0.0 11,582.3 1,659.5	Anthropogenic Anthropogenic. See Note 2. Biogenic Biogenic
Total Anthropogenic GHG Emissions (Pre-Control): 135,773.6						
Collection Efficiency (CE):		0.0%	[Pre-Control]	- 141		
Annual LFG Generation:		570.28	MMscf/yr	_IVI]		

Annual LFG Generation:	570.28	IVIIVISCT/ yr
Annual CH4 Generation (/yr):	5,475.8	metric tons
Annual CO2 Generation (/yr):	10,510.3	metric tons
CH4 Content:	50.0%	
CO2 Content:	35.0%	
Oxidation Fraction:	10%	

Notes:

1. CH4 and N2O emission factors and global warming potential (GWP) values from 40 CFR Part 98 Subpart A (Table A-1) and Subpart C (Table C-2).

2. Fugitive emissions of N20 from the landfill are considered to be negligable, as N20 is not a typical constituent of LFG per AP-42 (Section 2.4).

3. Fugitive emissions of CH4 are calculated generally per 40 CFR Part 98 Subpart HH Equation HH-6 minus the 2nd term of HH-6 which is applicable to combustion unit emissions.

4. Per Federal Register Vol 76, No 139 (7/20/2011), biogenic carbon dioxide (CO2) emissions were exempted from PSD and Title V permitting requirements from bioenergy and other biogenic stationary sources for a three year period. Exempted biogenic CO2 included: CO2 generated from the biological decomposition of waste in landfills, and CO2 from the combustion of landfill biogas. On July 12, 2013, the DC Circuit of Appeals struck down this exemption of boigenic CO2 from PSD and Title V permitting applicability evaluations. However this decision is still pending and no final resolution is available. In November 2014, the EPA released a guidance document titled "Framework for Assessing Biogenic CO2 Emissions from Stationary Sources," which indicated that all CO2 from LFG is biogenic and does not contribute to a net atmospheric increase in CO2. Using the available guidance, the calculations of GHG emissions assume that all CO2 generated by the landfill is biogenic. For information purposes, biogenic CO2 emissions estimates are provided herein.

TABLE A-7: POST-CONTROL GREENHOUSE GAS EMISSIONS ESTIMATES

		Pollutant				
		Emissi	ons	GHG Er	nissions	
Source	GHG	(metric tons)	(tpy)	GWP (CO2eq)	(tCO2eq/yr)	Comments
Landfill Expansion	Methane (CH4)	1,232.1	1,357.7	25	33,943.4	Anthropogenic
Landfill Expansion	Nitrous Oxide (N2O)	n/a	n/a	298	0.0	Anthropogenic. See Note 2.
Landfill Expansion	Carbon Dioxide (CO2) in uncaptured LFG	2,627.6	2,895.6	1	2,895.6	Biogenic
Landfill Expansion	Carbon Dioxide (CO2) from CH4 oxidation	376.5	414.9	1	414.9	Biogenic

Total Uncollected Anthropogenic GHG Emissions (Post-Control): 33,943.4

Collection Efficiency (CE):	75.0%	
LFG Generation Rate:	1,085	scfm [from LandGEM]
Annual LFG Generation:	570.28	MMscf/yr
Annual CH4 Generation (/yr):	5,475.8	metric tons
Annual CO2 Generation (/yr):	10,510.3	metric tons
CH4 Content:	50.0%	
CO2 Content:	35.0%	
Oxidation Fraction:	10%	

Notes:

1. CH4 and N2O emission factors and global warming potential (GWP) values from 40 CFR Part 98 Subpart A (Table A-1) and Subpart C (Table C-2).

2. Fugitive emissions of N20 from the landfill are considered to be negligable, as N20 is not a typical constituent of LFG per AP-42 (Section 2.4).

3. Fugitive emissions of CH4 are calculated generally per 40 CFR Part 98 Subpart HH Equation HH-6 minus the 2nd term of HH-6 which is applicable to combustion unit emissions.

4. Per Federal Register Vol 76, No 139 (7/20/2011), biogenic carbon dioxide (CO2) emissions were exempted from PSD and Title V permitting requirements from bioenergy and other biogenic stationary sources for a three year period. Exempted biogenic CO2 included: CO2 generated from the biological decomposition of waste in landfills, and CO2 from the combustion of landfill biogas. On July 12, 2013, the DC Circuit of Appeals struck down this exemption of boigenic CO2 from PSD and Title V permitting applicability evaluations. However this decision is still pending and no final resolution is available. In November 2014, the EPA released a guidance document titled "Framework for Assessing Biogenic CO2 Emissions from Stationary Sources," which indicated that all CO2 from LFG is biogenic and does not contribute to a net atmospheric increase in CO2. Using the available guidance, the calculations of GHG emissions assume that all CO2 generated by the landfill is biogenic. For information purposes, biogenic CO2 emissions estimates are provided herein.

APPENDIX B

Best Available Technology (BAT) Demonstration

BEST AVAILABLE CONTROL TECHNOLOGY (BAT) DEMONSTRATION

The Pennsylvania Department of Environmental Protection (PADEP) has developed guidelines for municipal solid waste landfills. These guidelines are in accordance with best available technology (BAT) as established under 25 PA Code §127.12(5) and specify various criteria for permitting MSW landfills, requirements for the collection and control of LFG, and criteria for the control of fugitive particulate matter.

An analysis of the BAT criteria for municipal solid waste landfills is provided below that demonstrates that the emissions of air pollutants from the Northern Realignment expansion will be controlled in accordance with the best available technology for municipal solid waste landfills set forth in the PADEP-published "Best Available Technology and Other Permitting Criteria for Municipal Solid Waste Landfills".

BAT Criteria

1) **<u>BAT Criterion</u>**: A Plan Approval is required for the expansion of an existing MSW landfill, its associated gas collection system, and air cleaning device(s), if the estimated emissions of VOCs from the expansion (calculated as the sum of the fugitive VOCs from the proposed expansion and VOCs of the proposed expansion before an air cleaning device) is greater than 2.7 tons per year.

<u>Response</u>: This plan approval application fulfills this requirement.

- 2) <u>BAT Criterion</u>: The owner or operator of the landfill should install an active landfill gas collection system as described in 40 CFR Section 60.752(b)(2)(ii)(A) and collect landfill gas in accordance with 25 PA Code Section 273.292 so as to prevent off-site migration. The gas collection system shall be designed to:
 - a. Collect gas from the entire MSW landfill that warrants control over the intended use period of the gas control or treatment system, and be operated to collect gas at a sufficient extraction rate (40 CFR Section 60.752(b)(2)(ii)(A); and,
 - b. Accommodate the maximum proposed gas flow rate of the landfill.

<u>Response</u>: The landfill currently operates an active gas collection and control system (GCCS). The GCCS was initially installed in accordance with 40 CFR §60.752(b)(2)(ii), the landfill's Title V permit, and the landfill's GCCS design plan. Operation of the GCCS is now in accordance with 40 CFR §60.762(b)(2)(ii) (NSPS Subpart XXX) along with the landfill's Title V permit and GCCS design plan. Subpart XXX is more stringent than the requirements of Subpart WWW cited in the BAT Criterion above.

The GCCS will be progressively expanded into the Northern Realignment expansion area in accordance with these applicable requirements, fulfilling the BAT requirement. Collected LFG is currently routed to an existing enclosed ground flare owned and operated by the landfill and which is operated in accordance with the Title V operating permit. In the future, collected LFG may also be routed to a second enclosed ground flare and/or a utility flare which will be installed, if necessary, in accordance with Plan Approval 48-00027C. In the future, collected LFG may also be routed to a third-party plant for treatment and subsequent use. The plant is currently under

construction and will be owned and operated in accordance with separate permits by Aria Energy East, LLC.

- 3) **<u>BAT Criterion</u>**: The collected landfill gas should be treated in accordance with 40 CFR Part 60, Subpart WWW for subsequent use or sale, or controlled by one of the following technologies:
 - a. A horizontal incinerator;
 - b. A boiler
 - c. An enclosed flare;
 - d. An internal combustion engine;
 - e. A combustion turbine
 - f. Carbon adsorption system;
 - g. Other technologies approved by DEP.

Please note that open candlestick flares are appropriate only when installed and operated within the limitations set forth in this document.

<u>Response</u>: Please note that the landfill is currently subject to NSPS Subpart XXX which is more stringent than Subpart WWW cited in the BAT Criterion above. Collected LFG is currently routed to an existing enclosed ground flare owned and operated by the landfill and which is operated in accordance with the Title V operating permit. In the future, collected LFG may also be routed to a second enclosed ground flare and/or a utility flare which will be installed, if necessary, in accordance with Plan Approval 48-00027C. In the future, collected LFG may also be routed to a third-party plant for treatment and subsequent use. The plant is currently under construction and will be owned and operated in accordance with separate permits by Aria Energy East, LLC.

4) <u>BAT Criterion:</u> In accordance with 25 PA Code Section 123.1(c), the landfill should take all reasonable actions to prevent particulate matter from becoming airborne. The landfill shall use Best Management Practices (BMPs), as appropriate in the MSW landfill industry, to minimize fugitive emissions from landfill operations. These BMPs should be appropriate for the landfill and determined based on actual site conditions. In no event will any activity, action or requirement cause the MSW landfill to engage in unsafe activities.

MSW landfill owners shall determine their site-specific BMPs, which generally will include one or more of the following:

- a) Paved and unpaved internal roadways should not be allowed to generate excessive dust emissions or the tracking of dirt/soils onto public roads (carryout). BMPs to prevent excessive emissions and carryout include, but are not limited to, sweeping and/or use of a tire washing system. Relevant factors to determine whether such activities are a BMP include the length of the paved road between unpaved portions of truck traffic and the public road, the type of soils at the landfill, weather, etc. Generally, whether sweeping or tire washing is necessary should be a function of actual, daily site conditions.
- b) Water or other chemical dust suppressants should be applied to the unpaved road surface to reduce fugitive dusts, if necessary based on daily site conditions. Water, if used, shall not be applied if the result would be a potentially unsafe condition, such as ice formation. In no event shall waste oil be used as a dust suppressant.

- c) An appropriate speed limit will be established and posted on all unpaved roadways within the MSW landfill. The MSW landfill owner or operator will submit the proposed speed limit to DEP, in writing, for approval. If the proposed speed limit is approved, it will be incorporated into MSW landfill's air quality operating permit. The owner or operator of the landfill should post speed limit signs consistent with the requirements of Pennsylvania Department of Transportation (PennDOT) (overall 20 inches x 24 inches, "SPEED LIMIT" in 4-inch letters and 10-inch numerals).
- d) Parking lots/areas and the landfill access roadways from the public highway to the landfill and other haul roads inside the landfill shall be paved, maintained, and cleaned by vacuum sweeping or any other approved means. The vacuum sweeping should be performed when necessary.
- e) Upon leaving the landfill, the undercarriage, wheels and chassis of the vehicles which were used to transport wastes and earth should be washed to prevent earthen carryout onto roadways.
- f) The access roadways if unpaved at the unloading areas (active cells) should have a crown and/or pitch so that water runs off and does not pool. Water or other chemical dust suppressants should be applied to the unpaved road surface to reduce fugitive dusts. Water or chemical dust suppressants should also be applied as needed.
- g) Water or other chemical dust suppressants should be applied on the shoulder of access roadways and the shoulder of the public highway for a distance of 500 feet in both directions. Water, if used, should be applied at least twice per day. Chemical dust suppressants, if used, should be applied at least once per month. Application of dust suppressants on the public highway should be done in accordance with the appropriate PennDOT Bulletins.
- Earth or other materials should not be deposited by trucking or other means on the public roadways. MSW landfills shall take all reasonable steps necessary to meet this performance standard.
- i) If any earth or other material is deposited by trucking or other means on public roadways, it shall be removed promptly.

Records describing those fugitive dust control activities that were undertaken should be maintained for on-site review by DEP personnel.

- a) A written manual documenting the BMPs utilized at the MSW landfill to control fugitive particulate matter emissions should be maintained on-site.
- b) The company shall keep sufficient records to demonstrate that the BMPs are being implemented.
- c) The BMP manual and records documenting implementation of the BMPs should be maintained at the office of the MSW landfill for 5 years and shall be made available to DEP upon request.

Response: The landfill takes all reasonable actions to prevent particulate matter from becoming airborne in accordance with its Title V operating permit. The landfill shall develop a written manual documenting the BMPs to be utilized to control fugitive particulate matter emissions and shall maintain records documenting implementation of the BMPs in accordance with the BAT guidelines.

APPENDIX C

Figures



FIGURE C-1 - PROCESS FLOW DIAGRAM



APPENDIX D

NNSR and PSD Applicability Evaluation

EVALUATION OF NEW SOURCE REVIEW APPLICABILITY

The PADEP has adopted in its entirety the EPA's Prevention of Significant Deterioration (PSD) permitting requirements promulgated in 40 CFR Part 52 (see 25 PA Code §127.83). PADEP has also promulgated requirements for New Source Review for sources located in non-attainment areas (NNSR) in 25 PA Code §127.201 through 127.218. This section evaluates the applicability of the PSD and NNSR permitting requirements with respect to the proposed Northern Realignment expansion area.

 Table D-1 presents a summary of existing criteria pollutant potential emission rates.

Source	VOC (tpy)	SO _x (tpy)	NO _x (†py)	CO (tpy)	PM ₁₀ (tpy)
Existing Landfill Operations (001) ¹	15.0	0.0	0.0	0.0	0.0
Landfill Surface and Roadway (002) ²	0.0	0.0	0.0	0.0	61.0
Leachate Storage (004) ³	0.6	0.0	0.0	0.0	0.0
LFG Flare (C002)⁴	1.1	90.7	44.5	111.2	9.5
Totals	16.7	90.7	44.5	99.9 ⁵	70.5

Table D-1 - Summary of Existing Criteria Pollutant Potential Emission Rates

Notes:

1. Existing landfill (001) potential VOC emissions based on LandGEM modeling results for existing permitted disposal areas with a safety factor (see Table A-2, Appendix A), and GCCS collection efficiency of 75%.

- Fugitive emissions (PM₁₀) from landfill surface and roadway (002) are based on the calculations provided in the recent PADEP Solid Waste Form G(A) Dust Emissions Estimate for the approved Southeast Realignment and are provided for information only. Fugitive emissions are not applicable under the PSD regulations of 40 CFR 52.21 when evaluating a major stationary source's applicability under PSD. Therefore, total PM₁₀ emissions do not include fugitive emissions from the landfill surface and roadway (002).
- 3. Leachate storage (004) potential emissions per Title V permit application dated April 27, 2005.
- 4. LFG flare (C002) potential emissions based on manufacturer emission factors and AP-42 published factors and the design rated heat input of 127 MMBtu/hr. SO_x emissions based on an assumed gas sulfur concentration of 500 ppmv based on EPA AP-42 with a conservative safety factor.
- 5. In accordance with Title V operating permit 48-00027, existing carbon monoxide emissions from the facility are currently limited to no more than 99.9 tons per year on a 12-month rolling sum. This application requests the removal of this limitation.

The potential emissions increases associated with the proposed landfill expansion are presented in **Table D-2**.

Compound	Potential Emissions (tpy)	Potential Emissions (lbs/hr)
NOx	0.0	0.0
СО	0.0	0.0
PM	0.0	0.0
PM10	0.0	0.0
SOx	0.0	0.0
VOC	3.7	0.84
GHGs	33,943.4	7,749.6

Table D-2 -	Summary	of Potential	Fmissions -	l andfill	Expansion
	Summary	or r otentiar	LIII3310113 -	Lanumi	LAPansion

Notes:

1. Anthropogenic, fugitive GHG emissions presented in units of CO2e and are shown for information purposes only.

The applicability of PSD and NNSR permitting requirements to the proposed landfill expansion is evaluated below.

Non-Attainment New Source Review Applicability

Pennsylvania's NNSR applicability requirements are set forth in 25 PA Code §127.203a, and apply to the "construction of a new major facility" or the "modification at an existing major facility under this section". Because Pennsylvania is located in the Northeast Ozone Transport Region, the pollutants potentially subject to NNSR requirements at the landfill are NO_x and VOCs. The applicable major source thresholds for these pollutants at the landfill are: 50 tpy for VOC and 100 tpy for NO_x.

The landfill is not an existing NO_x or VOC major-emitting facility per NNSR because its existing potential emissions do not exceed 50 tpy for VOC or 100 tpy for NO_x. Furthermore, the landfill expansion is not a "new major source" because the potential VOC and NO_x emissions for the expansion (presented in **Table D-2**) are less than 50 tpy of VOC and 100 tpy of NO_x.

Therefore, the Northern Realignment expansion is not subject to the special permitting requirements under NNSR in 25 PA Code §127.205.

Prevention of Significant Deterioration (PSD) Applicability

Per 40 CFR 52.21(b), the existing major source PSD threshold for regulated PSD pollutants at MSW landfills is 250 tpy. The landfill is therefore not an existing major stationary source for any criteria pollutant under the PSD major source permitting program. The following are the applicable major source thresholds that trigger special permitting requirements under PSD:

- CO: 250 tons per year
- SO_x: 250 tons per year
- PM10: 250 tons per year
- GHGs: 100,000 tons per year (see below)

As outlined in **Table D-2**, the potential emissions of PSD pollutants from the landfill expansion is less than the applicable thresholds under PSD.

As such, the landfill expansion is not a major stationary source under 40 CFR Part 52.

In 2010 the U.S. EPA published federal regulations imposing permitting requirements on stationary sources that emit greenhouse gases (GHGs) above applicable threshold limits. This rule, knowns as the Tailoring Rule, requires applicable sources to comply with permitting requirements under the New Source Review permitting program. Per 40 CFR §52.21(b)(49), beginning July 1, 2011, sources and modifications can become subject to PSD based solely on their GHG emissions. However, based on a recent U.S. Supreme Court ruling (Utility Air Regulatory Group v EPA, No. 12-1146(L), June 2014), greenhouse gases alone cannot trigger PSD (or Title V) permitting requirements.

In November 2014, the EPA released a guidance document titled "Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources" ("EPA Framework") and an accompanying memorandum titled "Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources" ("Guidance Memo"), addressing how it intends to handle the issue of biogenic CO₂ in both the Clean Power Plan and the PSD program. The EPA Framework and Guidance Memo indicated that all CO₂ from LFG is biogenic and does not contribute to a net atmospheric increase in CO₂ levels, and that EPA believed that such emissions should be exempt from PSD's Best Available Control Technology requirements. The Guidance Memo specifically recommended that these documents be shared with its co-regulators.

In most cases, fugitive emissions are not included in calculations to determine major source emission levels under federal PSD rules. Fugitive emissions are "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening". The EPA addressed the issue of landfill fugitive emissions in its October 3, 1994 memo "Classification of Emissions from Landfills for NSR Applicability Purposes". In this memo, EPA concludes that "it is no longer appropriate to conclude generally that landfill gas could not reasonably be collected at a … landfill project that does not include a gas collection system". Because the landfill operates a comprehensive GCCS in accordance with the requirements of its Title V operating permit, it can be concluded that the landfill collects all LFG that could "reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening". Therefore any raw "post-control" LFG emitted from the landfill is considered fugitive. GHGs reported herein are therefore shown for information only.

APPENDIX E

Compliance History Review Form



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF AIR QUALITY

AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Fully and accu	arately provide the following information, as specified. Attach additional sheets as necessary.					
Type of Compliance Review Form Submittal (check all that apply)						
Original	Filing Date of Last Compliance Review Form Filing:					
🛛 Amende	Amended Filing 3/15/2022					
Type of Subr	nittal					
New Pla	n Approval INew Operating Permit IRenewal of Operating Permit					
	n of Plan Approval Change of Ownership Periodic Submission (@ 6 mos)					
	SECTION A. GENERAL APPLICATION INFORMATION					
Name of App (non-corpora Bethlehem La	licant/Permittee/("applicant") tions-attach documentation of legal name) ndfill Company					
Address	2335 Applebutter Road					
	Bethlehem, PA 18015					
Telephone	610-317-3200 Taxpayer ID# 22-3575227					
Permit, Plan	Approval or Application ID# 48-00027					
Identify the fe box)	orm of management under which the applicant conducts its business (check appropriate Image: Syndicate Government Agency Inity Municipal Authority Joint Venture Inity Fictitious Name Association					
Public C	orporation Partnership Other Type of Business, specify below:					
Private C	Corporation L Limited Partnership					
Landfill operation	bw the type(s) of business activities performed.					

SECTION B. GENERAL INFORMATION REGARDING "APPLICANT"

If applicant is a corporation or a division or other unit of a corporation, provide the names, principal places of business, state of incorporation, and taxpayer ID numbers of all domestic and foreign parent corporations (including the ultimate parent corporation), and all domestic and foreign subsidiary corporations of the ultimate parent corporated or unincorporated) and privately held corporations. (A diagram of corporate relationships may be provided to illustrate corporate relationships.) Attach additional sheets as necessary.

Unit Name	Principal Places of Business	State of Incorporation	Taxpayer ID	Relationship to Applicant
IESI PA Corporation	Knoxville, TN 37919	Delaware Corporation	52-2175834	Intermediate parent
IESI Corporation	The Woodlands, TX 77380	Delaware Corporation	75-2712191	Intermediate parent
Waste Connections Holdings Ltd.	Vaughn ON, L4K 0E3	Ontario corporation	76854 4322	Intermediate parent
Waste Connections of Canada Inc.	Vaughn ON, L4K 0E3	Ontario corporation	86680 8298	Intermediate parent
IESI-BFC Holdings Inc.	Vaughn ON, L4K 0E3	Ontario corporation	85807 1467	Intermediate parent
Waste Connections, Inc.	Vaughn ON, L4K 0E3	Ontario corporation	80578 6555	Ultimate parent

SECTION C. SPECIFIC INFORMATION REGARDING APPLICANT AND ITS "RELATED PARTIES"

Pennsylvania Facilities. List the name and location (mailing address, municipality, county), telephone number, and relationship to applicant (parent, subsidiary or general partner) of applicant and all Related Parties' places of business, and facilities in Pennsylvania. Attach additional sheets as necessary.

Unit Name	Street Address	County and Municipality	Telephone No.	Relationship to Applicant
Blue Ridge Landfill Company	PO Box 399 Scotland, PA	Franklin County/Greene Township	717-709- 1700	Affiliate w/operations in PA
Waste Connections of Maryland, Inc.	265 Brookview Centre Way, Suite 205 Knoxville, TN 37919	Carroll County, MD	888-886- 1121	Affiliate w/operations in PA
BRADS Landfill	1061 Burma Road PO Box 335 Saint Clair, PA 17970	Schuylkill County/ Blythe Township	(570) 429- 2023	Affiliate w/ operations in PA

subsidiary corporations, if any.						
Na	me	Bus	siness Address			
List the names and being permitted (i.e	business address of . plant manager).	persons with overall mana	agement respons	ibility for the process		
Na	me	Bus	siness Address			
David Pannucci		2335 Applebutter Road, Beth	nlehem, PA 18015			
Astor Lawson		2335 Applebutter Road, Beth	nlehem, PA 18015			
Plan Approvals or	Operating Permits.	List all plan approvals	or operating pe	ermits issued by the		
Plan Approvals or Department or an a parties that are curr form is notarized. issuance and expira	Operating Permits. pproved local air pol rently in effect or hav This list shall inclu ation dates. Attach a	List all plan approvals lution control agency unde e been in effect at any time de the plan approval and dditional sheets as necessa	or operating per er the APCA to th 5 years prior to to operating permi- ary.	ermits issued by the e applicant or related he date on which this t numbers, locations,		
Plan Approvals or Department or an a parties that are curr form is notarized. issuance and expirat Air Contamination	Operating Permits. pproved local air pol rently in effect or hav This list shall inclu ation dates. Attach a Plan Approval/	List all plan approvals lution control agency unde e been in effect at any time de the plan approval and dditional sheets as necessa	or operating per er the APCA to th 5 years prior to t operating permi- ary. Issuance	ermits issued by the e applicant or related he date on which this t numbers, locations, Expiration		
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Franklin County/Greene

Schuylkill County/Blythe

Schuylkill County/Blythe

Township

Township

Township

Township

28-05015C

GP3-54-014

GP9-54-014

Blue Ridge Landfill

BRADS Landfill

BRADS Landfill

12/31/2023

7/5/2026

7/5/2026

7/19/2019

7/5/2022

7/5/2022

Compliance Background. (Note: Copies of specific documents, if applicable, must be made available to the Department upon its request.) List all documented conduct of violations or enforcement actions identified by the Department pursuant to the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. Attach additional sheets as necessary. See the definition of "documented conduct" for further clarification. Unless specifically directed by the Department, deviations which have been previously reported to the Department in writing, relating to monitoring and reporting, need not be reported.

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing or Corrected/Date	Dollar Amount Penalty
4/22/2021	Blythe Recycling and Demolition Site	N/A	Malodorous air contaminant release outside BRADS property	NOV	Corrected 5/10/2021	\$0
4/18/2018	IESI PA Bethlehem Landfill	48-00027	Failure to operate an air contamination source in a manner consistent with good operating practices.	Notice of Violation	Closed	\$0
11/13/2010	IESI PA Bethlehem Landfill	48/00027	Failure to control malodorous air contaminants	Notice of Violation	Closed	\$0
						\$
						\$
						\$
						\$

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Incident Status: Litigation Existing/Continuing Or Corrected/Date
CONTINUING C	DBLIGATION. Applicant	is under a continui	ng obligation to upd	ate this form using the between the date of

submission and Department action on the application.

VERIFICATION STATEMENT

Subject to the penalties of Title 18 Pa.C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I verify under penalty of law that I am authorized to make this verification on behalf of the Applicant/Permittee. I further verify that the information contained in this Compliance Review Form is true and complete to the best of my belief formed after reasonable inquiry. I further verify that reasonable procedures are in place to ensure that "documented conduct" and "deviations" as defined in 25 Pa Code Section 121.1 are identified and included in the information set forth in this Compliance Review Form.

8 2 2022 Signature Astor Lawson Name (Print or Type) **District Manager**

Title

APPENDIX F

Municipal Notifications
August 3, 2022

Mr. Peter Marshall Interim Township Manager Lower Saucon Township 3700 Old Philadelphia Pike Bethlehem, PA 18015

Subject: Application for Plan Approval Bethlehem Landfill Company

Dear Mr. Marshall:

On behalf of Bethlehem Landfill Company, SCS Engineers (SCS) has prepared this notification regarding the submission of an application for a plan approval to the PADEP for the Bethlehem Landfill (Title V Permit No. 48-00027). Specifically, the subject application is submitted for the construction of a landfill volume expansion.

Pennsylvania Code Title 25 (Environmental Protection – Air Resources) Section 127.43a requires municipal notification including a 30-day comment period regarding the application for a plan approval, which begins upon receipt of this notification. Copies of this application may be reviewed at, and comments regarding the application should be sent to the following:

Pennsylvania Department of Environmental Protection Northeast Regional Office Air Quality Program 2 Public Square Wilkes-Barre, PA 18711-0790

Should you have any questions regarding this application, please contact the PADEP Air Quality Program at 571-826-2511.

Sincerely,

vshe Pete

Joshua G. Roth, P.E. Project Director SCS Engineers

cc: Dave Pannucci, Astor Lawson, Cody White – Bethlehem Landfill

3

Roth, Josh

From: Sent: To: Subject: TrackingUpdates@fedex.com Thursday, August 4, 2022 10:17 AM Roth, Josh FedEx Shipment 777562706628: Your package has been delivered

This email originated from outside of SCS Engineers. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Hi. Your package was delivered Thu, 08/04/2022 at 10:15am.



Delivered to 3700 OLD PHILADELPHIA PIK, BETHLEHEM, PA 18015

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER

777562706628

FROM

SCS Engineers

11260 Roger Bacon Drive Suite 300 Reston, VA, US, 20190

1

Lower Saucon Township Mr. Peter Marshall, Interim Mgr 3700 Old Philadelphia Pike BETHLEHEM, PA, US, 18015

PURCHASE ORDER NUMBER	App for Plan Approval
REFERENCE	02198081.04 T-3
SHIPPER REFERENCE	02198081.04 T-3
SHIP DATE	Wed 8/03/2022 03:42 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	Reston, VA, US, 20190
DESTINATION	BETHLEHEM, PA, US, 18015
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

то



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August 3, 2022

Northampton County Council Northampton County Government Center 669 Washington Street Easton, PA 18042

Subject: Application for Plan Approval Bethlehem Landfill Company

Dear Council:

On behalf of Bethlehem Landfill Company, SCS Engineers (SCS) has prepared this notification regarding the submission of an application for a plan approval to the PADEP for the Bethlehem Landfill (Title V Permit No. 48-00027). Specifically, the subject application is submitted for the construction of a landfill volume expansion.

Pennsylvania Code Title 25 (Environmental Protection – Air Resources) Section 127.43a requires municipal notification including a 30-day comment period regarding the application for a plan approval, which begins upon receipt of this notification. Copies of this application may be reviewed at, and comments regarding the application should be sent to the following:

Pennsylvania Department of Environmental Protection Northeast Regional Office Air Quality Program 2 Public Square Wilkes-Barre, PA 18711-0790

Should you have any questions regarding this application, please contact the PADEP Air Quality Program at 571-826-2511.

Sincerely,

Ush (Ett.

Joshua G. Roth, P.E. Project Director SCS Engineers

cc: Dave Pannucci, Astor Lawson, Cody White - Bethlehem Landfill



Roth, Josh

From: Sent: To: Subject: TrackingUpdates@fedex.com Thursday, August 4, 2022 9:21 AM Roth, Josh FedEx Shipment 777562831780: Your package has been delivered

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FROM

SCS Engineers 11260 Roger Bacon Drive Suite 300 Reston, VA, US, 20190

то	Northampton County Council Northampton County Gvt Ctr 669 Washington Street EASTON, PA, US, 18042
PURCHASE ORDER NUMBER	App for Plan Approval
REFERENCE	02198081.04 T-3
SHIPPER REFERENCE	02198081.04 T-3
SHIP DATE	Wed 8/03/2022 03:42 PM
DELIVERED TO	Mailroom
PACKAGING TYPE	FedEx Envelope
ORIGIN	Reston, VA, US, 20190
DESTINATION	EASTON, PA, US, 18042
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



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