

Crematory operations generate emissions of organic gases, oxides of nitrogen (NO_{X}), oxides of sulfur (SO_X), carbon monoxide (CO), particulate matter (PM), and Toxic Air Contaminants (TACs) from combustion of assist fuel as well as the cremation of human or animal remains.

1. GENERAL INSTRUCTIONS

Emissions can be estimated in several ways. The simplest way is to estimate emissions from emission factors. The most accurate is to estimate emissions from continual monitoring systems or source tests.

Even if emissions are estimated using a source test, depending on permit conditions, the source test may not include all pollutants. In such cases, default emission factors can be used to supplement the pollutants that were not included in the source test.

Emissions Estimated Using Default Emission Factors

Emissions from fuel combustion, and emissions from remains are reported as two separate processes (e.g., Process P1, and Process P2). Natural gas combustion emissions are reported under the crematorium external combustion device, which is typically permitted by South Coast AQMD. Emissions from the combustion of human or animal remains are reported under the other process category. Each of these methods are detailed below.

Process 1 - Natural Gas Combustion

Facilities can estimate their criteria pollutant and TAC emissions from the combustion of assist fuel using the following equations:

$E = Q \times EF$

where,

E = Annual Emissions of VOC, NOx, SOx, CO, PM, and TACs Q = Annual fuel usage (units as shown in Table 1 and 2) EF = Emission factors from Tables 1 and 2

Table 1: External Combu	stion Equipm	ent (for all size	es)		
Fuel Type (Fuel unit)	Organic Gases (lb/unit)	Nitrogen Oxides (lb/unit)	Sulfur Oxides (lb/unit)	Carbon Monoxide (lb/unit)	Particulate Matter (lb/unit)
Natural Gas (mmscf) / Boilers Only	5.50	100.00	0.60	84.00	7.60
Natural Gas (mmscf) / Other Equipment	7.00	130.00	0.60	35.00	7.50
LPG, Propane, Butane (1000 gal.)	0.26	12.80	4.60	3.20	0.28
Diesel/Distillate Oil (1000 gal.)	1.32	20.00	0.21	5.00	2.00

Default Natural Gas Criteria Pollutant Emission Factors

https://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/combustion-default-emission-factors-2024.pdf

Default Natural Gas Toxic Air Contaminant Emission Factors

1

Table 2: Defa <10MMBtu/H	ult EF for Natural Gas Combustion - External Co Ir*	ombustion Equip	ment
TAC Code	Pollutant	CAS No	lb/mmscf
2	Benzene	71432	0.0080
12	Formaldehyde	50000	0.0170
19	Total PAHs (excluding Naphthalene)	1151	0.0001
19	Naphthalene	91203	0.0003
29	Acetaldehyde	75070	0.0043
30	Acrolein	107028	0.0027
32	Ammonia*	7664417	18.000
40	Ethyl benzene	100414	0.0095
44	Hexane	110543	0.0063
68	Toluene	108883	0.0366
70	Xylene	1330207	0.0272
239	Propylene	115071	0.731

* This table includes the default natural gas TAC emission factors not included in the SDAPCD emission factors in Table 3 below.

* This value corresponds to equipment with selective non-catalytic reduction (SNCR), for equipment with selective catalytic reduction (SCR) substitute listed value using 9.1 lb/mmscf, and for equipment without SNCR or SCR substitute using 3.2 lb/mmscf.

Process 2 - Emissions from the Cremation of Remains (Human or Animal)

Facilities can estimate their criteria pollutant and TAC emissions from the cremation of human or animal remains using the following equations:

$E = Q \times EF$

where,

E = Annual Emissions of VOC and Toxic Air Contaminants (TACs)

Q = Annual throughput of human or animal remains in tons

EF = Emission factors for VOC or from Table 3

Default Criteria Pollutant Emissions Factors

Table 3: Cremation of Remains		
	Organic Gases (lb/unit)	
	2.0	

San Diego APCD Default Toxic Air Contaminant Emission Factors

Table 4	: Default TAC EF for Cremation of H	uman and Ani	imal Remains	
TAC Code	Compound	CAS No	Human Cremation	Animal Cremation
			(lb/ton charged)	(lb/ton charged)
29	Acetaldehyde	75070	1.50E-03	1.50E-03
14	Arsenic and Compounds (Inorganic)	7440382	5.80E-04	5.80E-04
2	Benzene	71432	7.20E-04	7.20E-04
3	Beryllium and Compounds	7440417	2.00E-05	2.00E-05
5	Cadmium and Compounds	7440439	1.60E-04	1.60E-04
13	Chromium, Hexavalent	18540299	1.90E-04	1.90E-04
95	Chromium, Nonhexavalent	16065831	3.20E-04	3.20E-04
36	Copper and Compounds	7440508	4.00E-04	4.00E-04
12	Formaldehyde	50000	4.00E-04	4.00E-04
46	Hydrochloric Acid (Hydrogen Chloride)	7647010	8.60E-01	8.60E-01
73	Hydrogen Fluoride	7664393	7.80E-03	7.80E-03
15	Lead and Compounds (Inorganic)	7439921	9.80E-04	9.80E-04
17	Nickel and Compounds	7440020	5.70E-04	5.70E-04

Table 4	Default TAC EF for Cremation of	Human and Ani	imal Remains (Con	cluded)
TAC Code	Compound	CAS No	Human Cremation (lb/ton charged)	Animal Cremation (lb/ton charged)
50	Mercury and Compounds (Inorganic)	7439976	2.18E-03	0.00E+00
19	Polycyclic Aromatic Hydrocarbon (PAH)	1151	5.20E-05	5.20E-05
64	Selenium and Compounds	7446346	6.50E-04	6.50E-04
68	Toluene	108883	9.90E-03	9.90E-03
70	Xylenes	1330207	2.80E-03	2.80E-03
119	Zinc	7440666	5.20E-04	5.20E-04

https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/incinerator-and-crematory/APCD-Crematory-Natural-Gas-Fired-Human-Remains-Controlled-Air.pdf

Emissions Estimated Using Continuous Emissions Monitoring Systems or Source Test Data

Emission factors based on source tests may be used for emissions reporting so long as they are submitted for review by South Coast AQMD's Source Test Engineering staff. The review may find that the emission factor from the source test is underreported, or the source test is not acceptable, which will result in an amendment to the submitted emission report(s). For these situations, Rule 301 (e)(10)(E) waves any surcharges for underreported emissions estimated using a source test that was submitted for review prior to or at the time of the official AER submittal due date. The difference or underpayment is required to be paid, but no surcharges will be applied. Facility personnel should verify with South Coast AQMD Compliance staff that their source test was submitted for review prior to using the resulting emission factors for AER.

If all emissions are estimated by continuous emission monitoring system (CEMS) data or source testing of a single stack that emits both fuel and remains combustion emissions, then all emissions can be reported from a single process.

If fuel combustion emissions and cremation of remains emissions are not combined (e.g., two separate stacks) then emissions from each operation should be reported in separate devices (if permitted separately) or processes (if permitted as one device, e.g., Device ES1 and ES2, or Process P1 and Process P2).

Emissions Estimated Using Source Test and Default Emission Factors

If a mixture of source test and default emission factors are used, then emissions from fuel combustion and emissions from cremation of remains should be reported in separate processes. An example of this is when a stack is only source tested for NOx emissions. In this case, the default NOx emission factor from Table 1 may be substituted using the NOx emission factor from the source test. All other default emission factors should be used for the other criteria and TAC emissions.

2. EXAMPLES SHOWING HOW TO REPORT

Criteria pollutant and TAC emissions must be reported separately for each process; combustion of assist fuel, human remains, and animal remains. This can be done through the following steps:

- 1. Determine the annual fuel usage and human and animals remains, (Throughput, Q).
- 2. Collect any approved CEMS or source test reports, if applicable.
- 3. Enter the information into the AER Reporting Tool.

EXAMPLE 1:

Click <u>Emission Sources (ES) in the blue Navigation Menu</u>. The reporting tool displays existing emission sources in the green table as shown at bottom of the image below. If a crematory emission source is not listed, it must be added to the list by clicking on the <u>Add New Emission Source</u> link.

AER Home Browse Facilities	Access Facility START HERE 📰 👘 🏠 🕐
Facility ID: 999914	Emission source has been deleted.
. Facility Information . Status Update . Combustion Fuels	Build Reporting Structure
Emissions Release ocations	Emission Sources (ES) Classification
Emission Sources (ES) Report Process/Emissions Additional Toxic Instances Braduction and	Summary: This section contains facility permit profile. Please make sure that every device has a specified Emission Source (ES). New emission sources can also be added.
ubstances Production and Isage 3. Perform Data Validation 9. Review Summaries 10. Print Facility Report	Instruction: Add Devices (emissions sources) by clicking "Add New Emission Source". Edit devices by clicking "Profile" under the Emission Source (ES) Column. Add emission data by clicking "Open" under the Emissions column. Upload storage tank data by clicking on link "Click here" below.
	Add New Emission Source
	Displaying 0 emission sources.
	AER Device ID Permit Device ID
	Search Emission Sources
	Search: Print Preview
	Emission Permit Permit Permit Equipment AER ES ES Source Has Equipment PERP Statu Source Emissions A/N NO Device Description ID Name Category Emissions Equipment PERP Statu
	No data available in table

Adding Emission Sources

If you need to add an emission source for a crematory follow these directions. If you do not, then skip to Entering Emissions below. Fill out relevant information to the Emission Source by identifying ES Name (example – Human Remains Cremation) and selecting the appropriate <u>Operating ES Status</u> (typically normal operation), the <u>Categorize Emission Source</u> button will appear. By clicking this button, the tool will take the user to the next screen for categorizing this emissions source.

AER Home	Browse Facilities	Access Facility	START HE	RE 🛱 🖶 🔂 🕐
		Ready For Review ·	Facility ID: 9	99914 · SOUTH COAST AIR QUALITY MGT DIST(SCAQMD) · Reporting period: 2022
Facility	ID: 999914	Edit Emission	Source	
2. Status Up 3. Combust 4. Emission Locations 5. Emission 6. Report P	odate ion Fuels s Release Sources (ES) rocess/Emissions	Instruction:	Add new e specificati best reflec Red Asteris populated,	missions sources using information found on permits, manufacturers ons, or identifying placards. Select the Operating ES Status that ct the device's operation for this reporting period. All areas with a sk (*) must be addressed. Note: Some devices have been pre- , verify that the information is correct
7. Additiona	al Toxic Production and			
Usage		Permitted		
3. Perform	Data Validation	A/N		▼
. Review Summaries 0. Print Facility Report 1. Report Submission	PERP Equipmen Portable Equipm Registration Pro	t(CARB's nent gram)	Only CARB GHG MRR and Over 250 tons/yr (PTE) facilities must report PERP Emissions are not included when calculating emission fees	
		Permit No		
		Permit Device II	D	D1
		AER Device ID		will be assigned upon saving
		ES Name		Human Remains Crematior *
		Operating ES St	atus	Normal Operation
		Comment		6
		Emission Source	Category	Categorize Emission Source
		Design Capacity		
	Save or Save and pro	Save and reta ceed to Proc e and Mark a	er to List of Emission Sources or ess Reporting or <u>Cancel</u> as Completed Click here to <u>delete</u> this emission source and associated data.	
		AOMD web site Ha	me LAED Ma	h Sita I Submit quarties / commont I Danast a Bug
		AQMD web site Hol	ALK WE	bisite submit question/comment keport a bug

Crematory Operations are comprised of two processes; No. 1 External Combustion Equipment and No. 7 Other Processes (for the combustion of human or animal remains). Click No. 1 and a list of external combustion equipment will appear. Select *Crematorium*. Now, click No. 7 and select *Other process equipment*. See the next two screens for examples for selecting these two processes.

ermitted	A/N	Permit No	Permit Device ID	Permit Equipment Description	AER Device ID	ES Name	
					ESnull	Human Remains Cremation	
1. Extern follow	nal Comi ving Equi	pustion Equipm pment:	ent (e.g., boller, dryer,	oven, furnace, heater, afterburner,	flare, kiln or incinerator) <u>click here</u> to select one the	
В	oiler <1	0 MMBTU/HR		Heater 10-100	MMBTU/HR		
В	oiler 10-	100 MMBTU/H	IR	□ Heater >100 M	MMBTU/HR		
В	oiler >1	00 MMBTU/HR		Space/Water H	neater - not related to	a process <10 MMBTU/HR	
🗆 o	ven <10	MMBTU/HR		🗆 Afterburner <	10 MMBTU/HR		
🗆 o	ven 10-	100 MMBTU/H	R	🗆 Afterburner 10	0-100 MMBTU/HR		
🗆 o	ven >10	0 MMBTU/HR		□ Afterburner >	100 MMBTU/HR		
D	ryer <1	0 MMBTU/HR		🗆 Kilns			
D	ryer 10-	100 MMBTU/H	IR	Incinerator			
D	ryer >1	00 MMBTU/HR		Crematorium			
🗆 Fi	urnace <	10 MMBTU/H	R	Flare			
🗆 Fi	urnace 1	0-100 MMBTU	I/HR	Charbroiler			
🗆 Fi	urnace >	>100 MMBTU/H	IR	Deep Fat Frye	rs		
Пн	eater <	10 MMRTU/HR					

teg	jorize Emission Source	
	Furnace <10 MMBTU/HR	Flare
	Furnace 10-100 MMBTU/HR	Charbroiler
	Furnace >100 MMBTU/HR	Deep Fat Fryers
	Heater <10 MMBTU/HR	
	A In addition to burning fuels, if this devi checked under Category 7 below.	ce processes other materials, make sure box "Other Process Emissions" is
2.	Internal Combustion Equipment (e.g., internal con following Equipment:	mbustion engine (excluding vehicles), turbine or micro turbine) <u>click here</u> to select one of the
3.	Spray Coating/Spray Booth (e.g., coatings, solven	ts, adhesives, etc.) click here to select one of the following Equipment:
4.	Other Use of Organics (e.g., coatings, solvents, in following Equipment:	ks, adhesives, etc.) except in Spray Coating/Spray Booth, <u>click here</u> to select one of the
5.	Liquid Storage Tank (e.g. Underground, Abovegro	und, Small Tanks, Dispensing Systems) click here to select one of the following Equipment:
б.	Fugitive Components (Emission Leaks from Proces	ss Components per Rule 462, 1173 and 1176), <u>click here</u> to select all applicable Equipment:
7.	Other Processes (does not fit in any of the groups	mentioned above), click click here to mark "Other Process Equipment":
-	Other process equipment	

After saving, the user will be returned to the Device page. Click on the Save and proceed to List of Emission Sources button which will navigate you to the Emission Source Page.

Reporting Process Emissions

Click on the "<u>Open</u>" link in the Emissions column next to the Emission Source for the crematory operations, as shown below.



The reporting tool adds a new pop-up window that shows processes P1 and P2. Click the hyperlink "<u>Open</u>" to enter process information: process, throughput, criteria emissions, and TACs.

		i chi coo									
A/N	Permit No	Permit Device ID	Permit Device Description	AER Device ID	ES Name	ES Group Name	Source Category	Emissions?	Equipment	PERP	ES Status
<u>Open</u>			D1		ES15	Human Remains Cremation		External Combustion, Other Processes	ŶŶ	Crematorium	N
_		Process ID	Source	Group	Pro	cess/Materi	ial/Fuel Na	me	Status	Operation	Туре
	Open	P1	External C	ombustion					Work in progress	routin	e
	Open	P2	Other Proce	ss Emission	s				Work in progress	routin	ie
Ade	l Proces	s/Materi	ial/Fuel	D							

The hyperlinks "Open" will take the user to the Process page for that process.

After clicking the "<u>Open</u>" link, the Process page will open. The following is for the *External Combustion Equipment* process. The process information for *Other Processes* will require additional information which will be discussed later.

AER Home	Browse Facilities	Access	Facility	START	HERE						₽ (ì	?
	R	eady For	Review	· Facility II): 999914	· SOUTH C	OAST A	AIR QUALITY	MGT DIST	SCAQMD) · Repo	rting pe	riod: 2	2022
Facility	ID: 999914	« Ba	ick to Em	ission Sour	ce Proce	ss Referen	ce						
1. Facility I	nformation	Exte	ernal (ombus	tion								
 Status Up Combust Emission Emission Emission Report 	odate ion Fuels s Release Sources (ES) Process/Emissions	Plea com Com Fue inst	bustion bustion bustion bustion ls link ir ructions	de specif Emission fuels mu the mer are avail	ic inform Sources ust be se nu on th able by o	nation fo including elected o e left-sid clicking o	r ever g usag n the le) be n Hel	y process a e, emissior combustic fore enter p icon in th	i factor a on fuels ing data ne tool ba	d with your ex and control ef page (see 3. (on this page. ar.	cternal ficiency Combus Detail	(if a stion	ny).
Combustio	on	Step	1: Proce	ss						Optional: M	lark as C	omple	eted
Externa	al Combustion	erep											
Internal	Combustion		AER De	evice ID	Permit D	evice ID	A/N	Process ID	Rule #	Equipment	PERP	Fuel	SCC
Use of org	anics	Open	Open ES15			1		P1		Crematorium	No		
Spray C Booth Other U	oating/Spray lse of Organics	Step	2: Throu	ighput						Click here to	<u>delete</u> tř	nis pro	cess.
Fugitive C	omponents	1		Annua	Throughp	out			Criter	ia/Toxic Through	out		
Other Pro	Cesses	Open											
Process U	pset	C1		in Frankrik									
7. Additiona	al Toxic	step	3: Criter	Ta Emissi	ons (IDS)			Use D	efault Emission I	actors if	availa	able.
Substances Usage	Production and		Po	llutant	EF	Unit		EF	Data Sourc	e	Emis	sions	
8. Perform	Data Validation	Open		voc		lbs /							
9. Review S	ummaries	Open		NOx		lbs /							
10. Print Fa	cility Report	Open		SOx		lbs /							
11. Report	Submission	Open		со		lbs /							
		Open		PM		lbs /							
		Step	4: Toxic	(TAC/OD	C) Emiss	ions (lbs)						
			T	AC/ODC Gro	up	CAS #	EF	Unit	EF D	ata Source	E	mission	is
		Ad	d New										

Click on the "<u>Open</u>" link in the green table under Step 1, as shown in the screen above. Information can be selected and entered in every field, however only *Fuel* and *Rule* # are required entries as noted by the red asterisk next to those fields. Click <u>Save</u> button, as shown in the screen below.

ILK DEVICE ID	Permit Device ID	A/N	Process ID	Ru	le #	Equipment	PERP	Fuel	SCO
S15	D1		P1	4	01	Crematorium	No	Natural Gas	
AER Device ID ES15		AER D	AER Device Name Human Remains					nation	
PERMITTED		Permit Device ID D1							
Process ID	Process ID P1		Process Name						
Process Com	ment								
SCC									
Fuel	Natural Gas		~	*					
Rule #	474	• * <u>A</u>	dd Rule						
Fauinment	Crematorium							\sim	

After saving, the pop-up window for Step 1 closes. Click open on the Step 2 Throughput section. Enter the Fuel Usage (Annual Throughput) and Throughput Type (Input because it is based on the amount of fuel input to the incinerator), Throughput Origin and Fuel Usage Comment in the pop-up window, as shown below. Click <u>Save</u> button.

1	Edit Throughp	out Information -	Extern	al Comb	ousti	on				×	
	AER Device ID	Permit Device ID	A/N	Process	5 ID	Rule #	Equipment	PERP	Fuel	SCC	
ES	\$3			P1		474	Crematorium	No	Natural Gas		
	A	nnual Throughput					Criteria/Toxic T	hroughp	ut		
	1,0	00.00000000 mmscf	1,000.0000000 mmscf								
	Fuel Usage (Annual Throughput) 1,000.0000000 * mmscf *										
	Throughput Type	In	Input 🗸 *								
	Throughput Origi	n Pr	Product or raw material records e.g. receipts/invoices/bills 🗸 *								
	Fuel Usage Comn	nent Ga	s Bill								
								Sa	ve Canc	el	

Default emission factors are entered into Step 3 and Step 4.

External Combustion

Step 1: Process

Step 2: Throughput

Open ES3

Open

Open

clicking on Help icon in the tool bar.

AER Device ID

Step 3: Criteria Emissions (lbs)

Pollutant

voc

NOx

SOx

Permit Device ID

Annual Throughput

1,000.0000000 mmscf

EF

Facility ID: 999909

Facility Comments

1. Facility Information

- 2. Status Update
- 3. Combustion Fuels
- 4. Emission Sources (ES)
- 5. Report Process/Emissions

Combustion

External Combustio Internal Combustion Use of organics Spray Coating/Spray Booth Other Use of Organics Storage Tanks Fugitive Components Other Processes Process Upset 6. Additional Toxic Substances Production and Usage 7. Perform Data Validation 8. Review Summaries 9. Print Facility Report

10. Report Submission

 Open
 CO
 3.5000000e+1
 lbs / mmscf

 Open
 PM
 7.50000000e+0
 lbs / mmscf

 Step 4: Toxic (TAC/ODC) Emissions (lbs)

Use Default Emission Factors if available.

Use Default Emission Factors if available.

Emissions

6.5000000e+3

1.3000000e+5

6.0000000e+2

3.50000000e+4

7.5000000e+3

	TAC/ODC Group	CAS #	EF	Unit	EF Data Source	Emissions
<u>Open</u>	Benzene	71432	8.0000000e-3	lbs / mmscf	AQMD default	8.0000000e+0
<u>Open</u>	Formaldehyde	50000	1.7000000e-2	lbs / mmscf	AQMD default	1.70000000e+1
<u>Open</u>	PAHs, total, without individ. components also reported [PAH, POM]	1151	1.0000000e-4	lbs / mmscf	AQMD default	1.0000000e-1
<u>Open</u>	Naphthalene [PAH, POM]	91203	3.0000000e-4	lbs / mmscf	AQMD default	3.0000000e-1
<u>Open</u>	Acetaldehyde	75070	4.3000000e-3	lbs / mmscf	AQMD default	4.3000000e+0
<u>Open</u>	Acrolein	107028	2.7000000e-3	lbs / mmscf	AQMD default	2.7000000e+0
<u>Open</u>	Ammonia	7664417	1.8000000e+1	lbs / mmscf	AQMD default	1.8000000e+4
<u>Open</u>	Propylene	115071	7.3100000e-1	lbs / mmscf	AQMD default	7.31000000e+2
<u>Open</u>	Ethyl benzene	100414	9.5000000e-3	lbs / mmscf	AQMD default	9.5000000e+0
<u>Open</u>	Hexane	110543	6.3000000e-3	lbs / mmscf	AQMD default	6.3000000e+0
<u>Open</u>	Toluene	108883	3.6600000e-2	lbs / mmscf	AQMD default	3.6600000e+1
<u>Open</u>	Xylenes	1330207	2.7200000e-2	lbs / mmscf	AQMD default	2.72000000e+1
Ado	i New					

Please provide specific information for every process associated with your external combustion Emission Sources including usage, emission factor and control efficiency (if any). Combustion fuels must be selected on the combustion fuels page (see 3.

Rule #

474

Equipment

Crematorium

EF Data Source

Source Test

AQMD default

AQMD default

AQMD default

AQMD default

PERP

No

Criteria/Toxic Throughput

1.000.0000000 mmscf

Fuel

Click here to delete this process.

Natural Gas

SCC

Combustion Fuels link in the menu on the left-side) before entering data on this page. Detail instructions are available by

Process ID

P1

Unit

A/N

6.50000000e+0 lbs / mmscf

1.30000000e+2 lbs / mmscf

6.0000000e-1 lbs / mmscf

If you would like to change the emission factors by substituting using results from a source test, click on the "<u>Open</u>" link next to the pollutant that has the emission factor you would like to replace. In the pop-up window, click the Use Default checkbox to uncheck the box. Enter the new emission factor. Enter the reference for the emission factor. If it is a source test, enter the South Coast AQMD Source Test ID. As noted previously, only source tests that have been either approved or submitted for review can be used for emission reporting in AER. If your source test does not have a South Coast AQMD Source Test ID, contact the South Coast AQMD inspector for your facility. Select the appropriate Emission Factor Data Source from the dropdown menu. Click the save button.

<u>Open</u>

<u>Open</u>

<u>Open</u>

Open

<u>Open</u>

Open

<u>Open</u>

<u>Open</u>

Open

Open

Open

Open

8. Review Summaries

9. Print Facility Report

10. Report Submission

adility Commonte											
active comments		AER Device ID	Permit Device ID	A/N	Process ID	Rule	# Equi	pment	PERP	Fuel	SCC
Facility Information	Open E	ES3			P1	474	Crema	atorium	No Natu	ral Gas	
Status Update									Click here	to <u>delete</u> ti	nis process.
Combustion Fuels											
Emission Sources (ES)	Step 2:	Throughput									
. Report Process/Emissions			Annual Thursday				0	de anta (Tanda Ti			
Combustion	0		Annual Inroughput				CI	A 000 0000000	nrougnput		
External Combustion	Upen		1,000.0000000 mmsct					1,000.0000000	U mmsct		
Internal Combustion	Step 3:	Criteria Emissio	ns (lbs)					Use De	efault Emissio	n Factors i	f available.
Jse of organics											
Spray Coating/Spray		Pollutant	EF		Unit		EF Data	Source		Emissions	
Booth	Open	VOC	7.0000000e+0	lbs / mms	cf	A	QMD default			7	.00000000e+3
Other Use of Organics	Upen	NOx	1.3000000e+2	lbs / mms	cf	A	QMD default			1	.3000000e+5
torage Tanks	<u>Open</u>	SOx	6.0000000e-1	lbs / mms	cf	A	QMD default			6	.0000000e+2
ugitive Components	<u>Open</u>	CO	3.5000000e+1	lbs / mms	cf	A	QMD default			3	.50000000e+4
ther Processes	<u>Open</u>	PM	7.5000000e+0	lbs / mms	cf	A	QMD default			7	.5000000e+3
rocess Upset											
Additional Toxic	Step 4:	Toxic (TAC/ODC)	Emissions (lbs)					Use De	efault Emissio	n Factors i	f available.
tances Production and			TACIONCIC			CLE II		11.22			
erform Data Validation			TAC/OUC Group			CAS#	LF	Unit	EF Data So	urce I	missions
enorm para valluation	Open		Benzene			/143L	8.0000000e-3	lbs / mmsct	AUM) detail	IT 8	лалалююе+

71432

50000

1151

91203

75070

107028

7664417

115071

100414

110543

108883

1330207

8.00000000e-3 lbs / mmscf AQMD default

1.0000000e-4 lbs / mmscf AQMD default

4.3000000e-3 lbs / mmscf AQMD default

9.50000000e-3 lbs / mmscf AQMD default

3.66000000e-2 lbs / mmscf AQMD default

1.7000000e-2 lbs / mmscf

3.00000000e-4 lbs / mmscf

2.70000000e-3 lbs / mmscf

1.8000000e+1 lbs / mmscf

7.31000000e-1 lbs / mmscf

6.30000000e-3 lbs / mmscf

2.72000000e-2 lbs / mmscf

8.0000000e+0

1.70000000e+1

1.0000000e-1

3.0000000e-1

4.3000000e+0

2.70000000e+0

1.8000000e+4

7.31000000e+2

9.50000000e+0

6.3000000e+0

3.66000000e+1

2.72000000e+1

Benzene

Formaldehyde

PAHs, total, without individ. components also reported [PAH, POM]

Naphthalene [PAH, POM]

Acetaldehyde

Acrolein

Ammonia

Propylene

Ethyl benzene

Hexane

Toluene

Xylenes

		Ad	d New							
0	pen Criteria E	mission	Informa	ntion -	External Co	ombusti	on			×
A	ER Device ID	Permit De	evice ID	A/N	Process ID	Rule #	Equipment	PERP	Fuel	SCC
ES	3				P1	474	Crematorium	No	Natural Gas	
	Ann	nual Throu	ghput				Criteria/Toxic T	hroughp	out	
	1,000	0.00000000) mmscf				1,000.000000	0 mmscf		
	Throughput used t	o calculate	emissions:	1,000.0	0000000 mmscf					
	Pollutant		VOC - Vo	latile (Organic Comp	ounds				
	Emission Factor (E	F)	6.50000	000e+	0	* Ibs/mn	nscf			
Use default										
	Emission Factor Comment Source Test ID PR99									
If not using AQMD default emission factor please provide detailed references in the Emission Factor Comment box above or upload file with the information										
			Processe	s with	out this inforr	mation ar	re subject to a	udit.		
	Emission Factor Da	ata Source	Source	Test					▼ *	
	Emissions		6.50000	000e+	3 lbs					
								Sav	/e Cano	el

If you are satisfied with all the information entered in the Process page, click on the <<Back to Emission Source Process Reference button on the bottom of the page, as shown in the screen below.

Exte	rnal Combustic	n								
Pleas emiss Comb clicki	e provide specific i ion factor and cont oustion Fuels link i ng on Help icon in t	nformation for every proce rol efficiency (if any). Con n the menu on the left-si he tool bar.	ess as: mbust de) be	sociated w tion fuels r efore ente	ith your nust be ring dat	external combu selected on th a on this page.	ustion Emis e combust Detail ins	sion So tion fue truction	urces inclu I s page (s Is are avai	uding usage, ee 3 . lable by
Step 1	: Process							Opt	ional: Mark	as Completed
	AER Device ID	Permit Device ID	A/N	Process ID	Ru	le# Equip	oment	PERP	Fue	SCO
Open	ES3			P1	4	74 Crema	torium	No	Natural Gas	
Step 2	: Throughput							Click I	here to <u>dele</u>	te this process
		Annual Throughput				Cr	iteria/Toxic T	hroughpu	ıt	
Open		1.000.0000000 mmscf					1.000.000000	0 mmscf		
		-,					,			
Step 3	: Criteria Emission	(lbs)					Use D	efault En	nission Fact	<u>ors</u> if available
	Pollutant	EF		Unit		EF Data S	ource		Emis	sions
<u>Open</u>	VOC	6.5000000e+0	lbs / r	nmscf		Source Test				6.5000000e
<u>Open</u>	NOx	1.3000000e+2	lbs / r	nmscf		AQMD default				1.3000000e
<u>Open</u>	SOx	6.0000000e-1	lbs / r	mmscf		AQMD default				6.00000000e
<u>Open</u>	CO	3.5000000e+1	lbs / r	mmscf		AQMD default				3.50000000e
<u>Open</u>	PM	7.5000000e+0	lbs / r	mmscf		AQMD default				7.5000000e
Step 4	: Toxic (TAC/ODC)	missions (lbs)					Use D	efault En	nission Fact	<u>ors</u> if available
					CAS #	FF	Unit	EE D.	ta Course	Emissions
0		Passas			CA5 #	R 00000000 - 2	Uha / mm (EF Da	defeult	8.00000000
Open		Eermaldebude			7 143Z	8.0000000e-3	lbs / mmscf	AQMD	default	1.70000000-
Open	DALLs total without	Formaldenyde		DOWI	1151	1.7000000e-2	lbs / mmscf	AQMD	default	1.00000000
Open	PARS, LOLAL, WITHOU	Naphthalono [DAH_DOM]	u [PAH,	, FOM]	91202	2.0000000-4	lbs / mmf	AQMD	dofault	2.00000000
Open		Acetaldebude			75070	4 30000000-4	lbs / mmsef	AQMD	default	4 30000000
Oper		Acrolein			107028	2 70000000- 2	lbs / mmsef	AQMD	default	2 70000000
Open		Ammonia			7664417	1.80000000-1	lbs / mmsef	AQMD	default	1.80000000
Open		Propylene			115071	7 310000000 1	lbs / mmsef	AQMD	default	7 310000000
Open		Ethyl benzene			100414	9.50000000-1	lbs / mmscf		default	9.50000000
Open		Hexane			110543	6 3000000e-3	lbs / mmscf		default	6 30000000e
Open		TICAUTE			. 10343	0.0000000EF3		AQUID	- Coult	0.00000000
Open		Toluene			108882	< hhllllllllllllllllllll	IDS / mmsor		detaillt	

Click the "Open" link next to Process 2 Other Process Emissions in the Process References pop-up box.

-											
Pro	cess Re	ferences									×
A/N	Perm No	it Permit Device ID	Permit Device Description	AER Device ID	ES Name	ES Group Name	Source Category	Emissions?	Equipment	PERP	ES Status
Open			D1		ES15	Human Remains Cremation		External Combustion, Other Processes	Y	Crematorium	N
		Process ID	Source	Group	Pro	cess/Materi	ial/Fuel Na	me	Status	Operation	а Туре
	Open	P1	External C	ombustion					Work in progress	routin	ie
	Open	P2	Other Proce	ss Emission	S				Work in progress	routin	ie
A	dd Proc	ess/Mater	ial/Fuel	D						_	
											ок

Click on the "<u>Open</u>" link in the green table under Step 1. Identify the Process Name and fill out the Activity Code by selecting the appropriate information from the drop-down menu from each box. The example below shows entries for the correct sector, industry, operation, process, and rule for crematory operations. Click <u>Save</u> button.

Edit Em	nission	Pro	cess	- Other	Proce	sses		×
AER Device ID	Pern Device	nit e ID	A/N	Process ID	Rule #		Activity	SCC
ES15	D1			Ρ2	401	Miscella : Comm Animal	neous Operations and Services : Cremation ercial / Institutional : Single Chamber / Remains	
AER Dev	vice ID		ES	15 AER	Device	Name	Human Remains Cremation	
PERMIT	TED			Perr	nit Devi	ce ID	D1	
Process	ID		P2	Pro	ess Nan	ne		
Process	Comme	nt						
SCC	SCC							
Activity	Activity Code * Sect Mis Indu Cre Ope Cor Proc			neous Op on : cial / Ins namber /	eration titutior Anima	nal Nal Rema	ervices	
Rule #		401		•	* <u>Add</u>	Rule		
							Save Cance	

After saving, the pop-up window for Step 1 closes. Click open on the Step 2 Throughput section. Enter the Throughput Type (for this example, the second process would be throughput of remains in tons), as shown below. Select the Throughput Origin and enter a Throughput Comment. Click <u>Save</u> button.

Edit Thro	oughput In	forma	ation - Ot	her Pi	ocesses	×
AER Device ID	Permit Device ID	A/N	Process ID	Rule #	Activity	SCC
ES3			P2	401	Miscellaneous Operations and Services : Cremation : Commercial / Institutional : Single Chamber / Animal Remains	
					Annual Throughput	
Annual Th Throughp Throughp	iroughput ut Type ut Origin	1, In Di	put v *	0000 * ureme	* tons • *	
Throughp	ut Comment	Lo	gbook			
					Save Cano	el

Default emission factors are entered into Step 3 and Step 4.



If you would like to change the emission factors, for example replace them with source tested values, click on the "<u>Open</u>" link next to the pollutant that has the emission factor you would like to replace. In the popup window, click the Use Default checkbox to uncheck the box. Enter the new emission factor. Enter the reference for the emission factor. If it is a source test, enter the South Coast AQMD Source Test ID. As noted previously, only source tests that have been either approved or submitted for review can be used for emission reporting in AER. If your source test does not have a South Coast AQMD Source Test ID contact the South Coast AQMD inspector for your facility. Select the appropriate Emission Factor Data Source from the drop-down menu. Click the save button. The following screenshots show an example of how to substitute a default emission factor for beryllium with one from a source test.

Facility ID: 999909	Step 2	: Throughp	ut							
Facility Comments	_									
1 Encility Information					Annual	Throughput				
2 Status Undate	<u>Open</u>				1,000.00	000000 tons				
3. Combustion Fuels	Step 3	: Criteria E	missions (lbs)					Use <u>Default</u>	Emission Fact	ors if available.
5. Report Process/Emissions		Pollutant	EF	Unit	Controlled	EF	EF Data Source	Overall C	E	Emissions
Combustion	Open	VOC	2.0000000e+0	lbs / tons	No	AC	MD default			2.00000000e+3
External Combustion	Add	New								
Use of organics	Step 4	: Toxic (TAC	/ODC) Emissions (lbs)					Use Default	Emission Fact	ors if available.
Spray Coating/Spray Booth			TAC/ODC Group	CAS #	EF	Unit	Controlled EF	EF Data Source	Overall CE	Emissions
Other Use of Organics	Open		Acetaldehyde	75070	1.50000000e-3	lbs / tons	No	AQMD default		1.50000000e+0
Storage Tanks	Open	Arsenic a	nd Compounds (Inorganic)	7440382	5.8000000e-4	lbs / tons	No	AQMD default		5.8000000e-1
Fugitive Components	Open		Benzene	71432	7.2000000e-4	lbs / tons	No	AQMD default		7.2000000e-1
Other Processes	Open	Beryl	lium and Compounds	7440417	2.00000000e-5	lbs / tons	No	AQMD default		2.00000000e-2
Process Upset	Open	Cadn	nium and Compounds	7440439	1.6000000e-4	lbs / tons	No	AQMD default		1.6000000e-1
6. Additional Toxic	Open	Chr	omium, Hexavalent	18540299	1.9000000e-4	lbs / tons	No	AQMD default		1.9000000e-1
Substances Production and	Open	Chron	nium, Nonhexavalent	16065831	3.20000000e-4	lbs / tons	No	AQMD default		3.20000000e-1
Usage	Open	Cop	per and Compounds	7440508	4.0000000e-4	lbs / tons	No	AQMD default		4.00000000e-1
7. Perform Data Validation	Open		Formaldehyde	50000	4.0000000e-4	lbs / tons	No	AQMD default		4.00000000e-1
8. Review Summaries	Open	ł	lydrochloric acid	7647010	8.6000000e-1	lbs / tons	No	AQMD default		8.6000000e+2
9. Print Facility Report	Open	H	lydrogen Fluoride	7664393	7.8000000e-3	lbs / tons	No	AQMD default		7.8000000e+0
10. Report Submission	Open	Lead and	d Compounds (Inorganic)	7439921	9.8000000e-4	lbs / tons	No	AQMD default		9.8000000e-1
	Open	Nic	kel and Compounds	7440020	5.7000000e-4	lbs / tons	No	AQMD default		5.70000000e-1
	Open	Mercury a	nd Compounds (Inorganic)	7439976	0.0000000e+0	lbs / tons	No	AQMD default		0.0000000e+0
	Open	Polycyclic A	romatic Hydrocarbon (PAH)	1151	5.2000000e-5	lbs / tons	No	AQMD default		5.2000000e-2
	Open	Seler	nium and Compounds	7446346	6.5000000e-4	lbs / tons	No	AQMD default		6.5000000e-1
	0000		Toluene	108883	9.9000000e-3	lbs / tons	No	AQMD default		9.9000000e+0
	open									
	Open		Xylenes	1330207	2.8000000e-3	lbs / tons	No	AQMD default		2.8000000e+0



Facility Information Status Update Ste Combustion Fuels Emission Sources (ES) Report Process/Emissions Combustion External Combustion Internal Combustion Stee Second Organics	Pen Pollu Pollu Add New Pollu Polu Pollu Polu Pollu Pollu Polu Polu	tant EF C 2.0000000e+0	Unit lbs / tons	1,000.00 Controlled	000000 tons		Use <u>Default</u>	Emission Fact	<u>ors</u> if available										
Actility information Status Update Ste Combustion Fuels Emission Sources (ES) Report Process/Emissions Combustion External Combustion Internal Combustion Stee Second Organics	ep 3: Crite Pollu Den VC Add New ep 4: Toxid	tant EF C 2.0000000e+0	Unit	Controlled			Use <u>Default</u>	Emission Fact	<u>ors</u> if available										
Combustion Fuels Emission Sources (ES) Report Process/Emissions Combustion External Combustion Internal Combustion Stee Groganics Composition Composition	Pollu Den VC Add New Pollu	tant EF IC 2.0000000e+0	Unit lbs / tons	Controlled		Step 3: Criteria Emissions (lbs) Use Default Emission Factors if available													
Report Process/Emissions ombustion External Combustion Internal Combustion Stee of organics	Add New	C 2.0000000e+0	lbs / tons	Pollutant EF Unit Controlled EF EF Data Source Overall CE Emission															
iombustion External Combustion Internal Combustion Ise of organics	Add New			No	AO.	WD default	overall e	-	2.00000000										
External Combustion Internal Combustion Ise of organics	ep 4: Toxi																		
Internal Combustion Stee Second State Second	ep 4: Toxi																		
lse of organics	ep 4. 10XII	(TAC/ODC) Emissions (lbs)					Uro Dofault	Emission East	torr if availabl										
Se of organics							Use <u>Derautt</u>	LITISSION FACT											
SDF3V L O3TID/L/SDF3V		TAC/ODC Group	CAS #	EF	Unit	Controlled EF	EF Data Source	Overall CE	Emissions										
Booth Or	ben -	Acetaldebyde	75070	1.5000000e-3	lbs / tons	No	AOMD default		1.50000000										
Other Use of Organics	pen Ar	senic and Compounds (Inorganic)	7440382	5.8000000e-4	lbs / tons	No	AOMD default		5,8000000										
torage Tanks	pen	Benzene	71432	7.2000000e-4	lbs / tons	No	AOMD default		7.2000000										
ugitive Components	ben l	Beryllium and Compounds	7440417	1.53000000e-5	lbs / tons	No	Source Test		1.53000000										
ther Processes	pen	Cadmium and Compounds	7440439	1.6000000e-4	lbs / tons	No	AQMD default		1.6000000										
rocess Upset	<u>ben</u>	Chromium, Hexavalent	18540299	1.9000000e-4	lbs / tons	No	AQMD default		1.9000000										
	<u>pen</u>	Chromium, Nonhexavalent	16065831	3.2000000e-4	lbs / tons	No	AQMD default		3.2000000										
ostances Production and	<u>ben</u>	Copper and Compounds	7440508	4.0000000e-4	lbs / tons	No	AQMD default		4.0000000										
ige Og	<u>ben</u>	Formaldehyde	50000	4.0000000e-4	lbs / tons	No	AQMD default		4.0000000										
Perform Data Validation	<u>pen</u>	Hydrochloric acid	7647010	8.6000000e-1	lbs / tons	No	AQMD default		8.60000000										
Review Summaries	<u>pen</u>	Hydrogen Fluoride	7664393	7.8000000e-3	lbs / tons	No	AQMD default		7.80000000										
Print Facility Report	<u>ben</u> L	ead and Compounds (Inorganic)	7439921	9.8000000e-4	lbs / tons	No	AQMD default		9.8000000										
Report Submission	<u>pen</u>	Nickel and Compounds	7440020	5.7000000e-4	lbs / tons	No	AQMD default		5.7000000										
Q	<u>pen</u> Me	rcury and Compounds (Inorganic)	7439976	0.0000000e+0	lbs / tons	No	AQMD default		0.00000000										
	pen Poly	cyclic Aromatic Hydrocarbon (PAH)	1151	5.2000000e-5	lbs / tons	No	AQMD default		5.2000000										
Q	<u>pen</u>	Selenium and Compounds	7446346	6.5000000e-4	lbs / tons	No	AQMD default		6.5000000										
Op	pen	Toluene	108883	9.9000000e-3	lbs / tons	No	AQMD default		9.90000000										
	<u>ben</u>	Xylenes	1330207	2.8000000e-3	lbs / tons	No	AQMD default		2.8000000										
	<u>pen</u>	Zinc	/440666	5.2000000e-4	lbs / tons	No	AQMD default		5.2000000										

Clicking the << Back to Emission Source Process Reference_button on the bottom of the Process page, returns to the user to the Process References pop-up box, if changes need to be made to Process 1. Clicking on the Emission Sources (ES) link on the Navigation Menu on the left side of the page, returns the user to the Emission Sources page, where the next Emission Source, if any, can be accessed.