

From: [Air.Pollution Control](#)
To: [APC Permitting](#)
Subject: FW: Please upload to EM Resources (43-0127 / 980655) - Emissions for Generator and Compressor
Date: Thursday, September 15, 2022 2:53:13 PM
Attachments: [emailsig_04_335_71cbdba6-1673-492a-85a8-22997d3dde1a.png](#)
[Portable transloader engine reviews.pdf](#)

From: Greg Forte <Greg.Forte@tn.gov>
Sent: Thursday, September 15, 2022 10:26 AM
To: Air.Pollution Control <Air.Pollution.Control@tn.gov>
Subject: Please upload to EM Resources (43-0127 / 980655) - Emissions for Generator and Compressor

From: Mark Cummings <mark.cummings@ecomaterial.com>
Sent: Tuesday, August 16, 2022 2:34 PM
To: Greg Forte <Greg.Forte@tn.gov>
Subject: [EXTERNAL] Emissions for Generator and Compressor

*** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. ***

Greg,

Scroll down to see the emissions for the generator and the compressor engines starting at page 5 of 15.

Thanks,

Mark

Mark Cummings
Sr Environmental Manager



P: (470) 599-3836

M: (470) 599-3836

mark.cummings@ecomaterial.com

219 Crazy Bear Ridge, 11860 Big Canoe, Jasper GA, 30143

AIR CONTAMINANT SOURCE(S) INFORMATION

10. Description of air contaminant source(s) and Unique Source ID(s). List, identify, and briefly describe process emission sources, fuel burning installations, and incinerators that are contained in this application and include a Unique Source ID for each source. The Unique Source ID is a name/number/letter, which uniquely identifies the air contaminant source(s), like Boiler #1, Paint Line #1, Engine #1, etc. (see instructions for more details)

The Boral Resources - Cumberland Transloading Facility will use a portable fly ash transloader to convey fly ash from tanker trucks to railcars. The unit is a single unit mounted on a mobile trailer that is equipped with a gasoline powered generator for electricity and a gasoline powered compressor material transfer. Fly ash will be transferred using the transloader to load fly ash from tanker trucks to rail cars via pneumatic transfer. All material handling will be performed completely enclosed and abated by a fabric filter dust collector.

The electric generator is powered by a 4 Stroke SI, 388cm³, 22 HP which is subject to NSPS JJJJ. The compressor is powered by a 4 Stroke SI, 24.7cm³, 13.4 HP which is also subject to NSPS JJJJ. Emissions and applicable requirements are provided along with the Initial Notification of Applicability form.

The emissions associated with the fly ash transloader are provided for particulate matter and HAPs using applicable AP-42 emissions factors for the transfer of cement supplement (fly ash). The emissions associated with the fly ash transloading operations are assumed to be de minimis and we are asking for a letter of determination.

11. Is the air contaminant source(s) in a nonattainment area? If "Yes", then minor source BACT must be addressed. Yes No



12. Normal operation:	Hours/Day 6	Days/Week 5	Weeks/Year 52	Days/Year 1560
13. Percent annual throughput	Dec. – Feb. 10	March – May 30	June – August 30	Sept. – Nov. 30

TYPE OF PERMIT REQUESTED (check appropriate box)

14. Operating permit <input checked="" type="checkbox"/>	Date construction started 10/1/2020	Date completed 10/1/2020	Date of ownership change (if applicable)
	Last permit number(s)	Emission Source Reference Number(s)	
Construction permit <input checked="" type="checkbox"/>	Last permit number(s)	Emission Source Reference Number(s)	

If you chose Construction permit above, then choose either New Construction, Modification, or Location Transfer

New Construction <input checked="" type="checkbox"/>	Starting date 10/1/2020	Completion date 10/1/2020
Modification <input type="checkbox"/>	Date modification started or will start	Date completed or will complete
Location Transfer <input type="checkbox"/>	Transfer date	Address of last location

Tennessee Sample - Initial Notification of Applicability^b

National Emission Standards for Hazardous Air Pollutants:

Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63 Subpart ZZZZ

☒ Yes, I am subject to 40 CFR Part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

NAICS code(s): 423320

Compliance Date: ☐ Existing source: May 3, 2013 ☒ New/reconstructed source: upon initial startup

Note: For the May 3, 2013 compliance date for existing sources check any that applies to the following engine types at your facility:

- ☐ Existing non-emergency compression ignition (CI) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions
- ☐ Existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions
- ☒ Existing stationary CI RICE located at an area source of HAP emissions

Company name: Boral Resources LLC

Facility name (if different): Cumberland City Transloading Facility

Facility (physical location) address: Industrial Park BLVD, Cumberland City, TN 37050

County Facility is located: Stewart

My facility is a (please choose one): ☐ Major source ☒ Area source

Note: An area source does not have the potential to emit 10 tons per year or more of any single HAP or 25 tons per year or more of any combination of HAP.

Owner name/title: Boral Resources LLC

Owner/company address: 200 Mansell Court East Suite 305, Roswell, GA 30076

Telephone number: (512) 560-6763 E-mail address (if available): pbarron@boral.com

^a This is an example of the type of information that must be submitted to fulfill the Initial Notification of Applicability Status requirement of 40 CFR 63, subpart ZZZZ. You may submit the information in another form or format, or you may use this form.

^b Initial Notification is due 120 days after the effective date of the rule or 120 days after you become subject to the rule.

If the Operator information is different from the Owner, please provide the following:

Operator name/title: _____

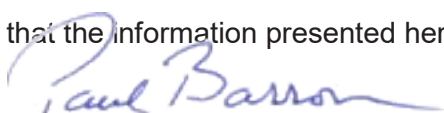
Operator telephone number: _____

Operator email address (if available): _____

The following are RICE (engines) at this facility subject^b to subpart ZZZZ:

Brief Description of the Stationary RICE at the Facility		List each RICE and HP Site Rating
(1)	Honda GX360, GEN-14000-1MHE	4 Stroke SI, 388cm ³ , 22 HP
(2)	Kohler, Command PRO CH440	4 Stroke SI, 24.7cm ³ , 13.4 HP
(3)		
(4)		
(5)		

I hereby certify that the information presented herein is correct to the best of my knowledge.



(Signature of Responsible Official/title)

Environmental Manager

(Name/title)

09/03/2020

(Date)

(512) 560-6763

(Telephone No.)

Submit to:

RICE Contact	
Tennessee Department of Environment & Conservation Division of Air Pollution Control William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15th Floor Nashville, TN 37243	Environmental Protection Agency Director of Air, Pesticides and Toxics Management Division Atlanta Federal Center 61 Forsyth Street Atlanta, GA 30303-3104

U.S. EPA standards for reciprocating internal combustion engines (RICE)

Applicability is determined separately for each engine. Each of your engines and any other air pollutant sources will need to be evaluated.

New source performance standards (NSPS) require new emission sources to be less polluting than older sources.

National emission standards for hazardous air pollutants (NESHAP) prevent or reduce emissions that have health impacts.

- Each NSPS or NESHAP describes specific equipment, processes, or industries.
- Multiple federal standards may apply to your business. It is possible that if you make a change at your business, a federal standard that did not previously apply now will, or the one you are already following may have additional requirements.
- Federal standards can determine whether you need a permit and what requirements you must follow. You may have to follow federal standard requirements in addition to state permit requirements. Below are some of the common federal standards that affect engines.

New source performance standards (NSPS)

Does one of the federal NSPS for engines apply to any of your engines?

The two most common NSPSs for engines are:

- 1) Standards of Performance for Compression Ignition Engines
- 2) Standards of Performance for Spark Ignition Engines

Full Text: [40 CFR 60, subp. IIII](#)
[40 CFR 60, subp. JJJJ](#)

To help understand if this rule applies, use the Regulation Navigation Tool provided by EPA for NSPS IIII and JJJJ.
<https://www3.epa.gov/ttn/atw/ice/quiz.html>

Yes

You must follow NSPS requirements. Continue to the question below.

Continue to the next question

National emission standard for hazardous air pollutants (NESHAP)

Does the federal NESHAP for engines apply?

The most common NESHAP for engines is for:

Stationary Reciprocating Internal Combustion Engines

Full Text: [40 CFR 63, subp. ZZZZ](#)

To help understand if this rule applies, use the Regulation Navigation Tool provided by EPA for NESHAP ZZZZ.
<https://www3.epa.gov/airtoxics/rice/output/quiz.html>

Yes

Follow NESHAP requirements. Assess emissions for permit thresholds.

Continue to the information below.

Air emissions from internal combustion engines

Reciprocating internal combustion engine (RICE)

Engine and fuel type	Reciprocating - gasoline	Facility identifier for engine	Honda Generator
Engine use	Routine	If emergency engine is used for peak-shaving or contracted for >15 hr/yr, choose 'Routine.'	
Rated mechanical output	22	Horsepower(HP) or Brake Power (HP-hr)	
Number of hours operated per 12 months	1250	hours per year (hr/yr)	
Brake specific fuel consumption	7000	(Btu/HP-hr)	
Heat value of fuel	125000	(Btu/gal)	
Sulfur content of the fuel	NA	%	

Internal combustion engine potential and actual emissions

Pollutant	a GWP ¹	b Engine Rated Output (MMBtu/hr)	c Actual Annual Throughput (MMBtu/yr)	d Potential Annual Hours ³ (hr/yr)	e Emission Factor (lbs/MMBtu)	Potential Emissions (ton/yr) (b * d * e) / 2000	Actual Emissions (tons/yr) (c * e) / 2000
		0.154	192.5	8760	by pollutant		
Criteria Air Pollutants	see engine emission factors tab						
PM					0.1000	0.07	0.01
PM10					0.1000	0.07	0.01
PM2.5					0.1000	0.07	0.01
SOx					0.0840	0.06	0.01
NOx					1.6300	1.10	0.16
VOC					3.0300	2.04	0.29
CO					0.9900	0.67	0.10
Lead					n/a		
Greenhouse Gas Emissions	Source: 40 CFR 98, Subp. C, Table C-1 and C-2						
CO ₂ ²	1				154.81	104.42	14.90
CH ₄ ²	25				0.0066	0.0045	0.0006
N ₂ O ²	298				0.0013	0.0009	0.0001
GHG total (CO ₂ e) ²						104.80	14.95

Internal combustion engine potential and actual emissions

Pollutant	a	b	c	d	e	Potential Emissions (ton/yr) (b * d * e) / 2000	Actual Emissions (tons/yr) (c * e) / 2000
	GWP ¹	Engine Rated Output (MMBtu/hr)	Actual Annual Throughput (MMBtu/yr)	Potential Annual Hours ³ (hr/yr)	Emission Factor (lbs/MMBtu)		
		0.154	192.5	8760	by pollutant		
Hazardous Air Pollutants							
					see engine emission factors tab		
Acetaldehyde					0.000767	0.0005	0.0001
Acrolein					0.0000925	0.0001	0.0000
Benzene					0.000933	0.0006	0.0001
Formaldehyde					0.00118	0.0008	0.0001
Naphthalene					0.0000848	0.0001	0.0000
PAH					0.000168	0.0001	0.0000
Toluene					0.000409	0.0003	0.0000
Xylene					0.000285	0.0002	0.0000
HAP total						0.0027	0.0004

¹ Global Warming Potential from 40 CFR Part 98, Subpart A, Table A-1

² CO₂e = carbon dioxide equivalents

³ Routine = 24 hr/day * 365 day/yr or 8760 hr/yr; Emergency = 500 hr/yr

Air emissions from internal combustion engines

Reciprocating internal combustion engine (RICE)

Engine and fuel type	Reciprocating - gasoline	Facility identifier for engine	Kohler Compressor
Engine use	Routine	If emergency engine is used for peak-shaving or contracted for >15 hr/yr, choose 'Routine.'	
Rated mechanical output	13.4	Horsepower(HP) or Brake Power (HP-hr)	
Number of hours operated per 12 months	1250	hours per year (hr/yr)	
Brake specific fuel consumption	7000	(Btu/HP-hr)	
Heat value of fuel	125000	(Btu/gal)	
Sulfur content of the fuel	NA	%	

Internal combustion engine potential and actual emissions

Pollutant	a GWP ¹	b Engine Rated Output (MMBtu/hr)	c Actual Annual Throughput (MMBtu/yr)	d Potential Annual Hours ³ (hr/yr)	e Emission Factor (lbs/MMBtu)	Potential Emissions (ton/yr) (b * d * e) / 2000	Actual Emissions (tons/yr) (c * e) / 2000
		0.0938	117.25	8760	by pollutant		
Criteria Air Pollutants	see engine emission factors tab						
PM					0.1000	0.04	0.01
PM10					0.1000	0.04	0.01
PM2.5					0.1000	0.04	0.01
SOx					0.0840	0.03	0.00
NOx					1.6300	0.67	0.10
VOC					3.0300	1.24	0.18
CO					0.9900	0.41	0.06
Lead					n/a		
Greenhouse Gas Emissions	Source: 40 CFR 98, Subp. C, Table C-1 and C-2						
CO ₂ ²	1				154.81	63.60	9.08
CH ₄ ²	25				0.0066	0.0027	0.0004
N ₂ O ²	298				0.0013	0.0005	0.0001
GHG total (CO ₂ e) ²						63.83	9.11

Internal combustion engine potential and actual emissions

Pollutant	a	b	c	d	e	Potential Emissions (ton/yr) (b * d * e) / 2000	Actual Emissions (tons/yr) (c * e) / 2000
	GWP ¹	Engine Rated Output (MMBtu/hr)	Actual Annual Throughput (MMBtu/yr)	Potential Annual Hours ³ (hr/yr)	Emission Factor (lbs/MMBtu)		
		0.0938	117.25	8760	by pollutant		
Hazardous Air Pollutants							
					see engine emission factors tab		
Acetaldehyde					0.000767	0.0003	0.0000
Acrolein					0.0000925	0.0000	0.0000
Benzene					0.000933	0.0004	0.0001
Formaldehyde					0.00118	0.0005	0.0001
Naphthalene					0.0000848	0.0000	0.0000
PAH					0.000168	0.0001	0.0000
Toluene					0.000409	0.0002	0.0000
Xylene					0.000285	0.0001	0.0000
HAP total						0.0016	0.0002

¹ Global Warming Potential from 40 CFR Part 98, Subpart A, Table A-1

² CO₂e = carbon dioxide equivalents

³ Routine = 24 hr/day * 365 day/yr or 8760 hr/yr; Emergency = 500 hr/yr

Actual emissions: Engines

These pollutant totals represent the information you entered on the blue tabs.

Pollutant	Engine 1 (ton/yr)	Engine 2 (ton/yr)	Engine 3 (ton/yr)	Engine 4 (ton/yr)	Engine 5 (ton/yr)	Actual Emissions (ton/yr)	Opt. D Permit Limits (ton/yr)
Criteria Air Pollutants							
PM	0.01	0.01				0.02	50
PM10	0.01	0.01				0.02	50
PM2.5	0.01	0.01				0.02	50
SOx	0.01	0.00				0.01	50
NOx	0.16	0.10				0.25	50
VOC	0.29	0.18				0.47	50
CO	0.10	0.06				0.15	50
Lead						0.00	0.5
Greenhouse Gas Emissions							
CO ₂	14.90	9.08				23.98	
CH ₄	0.00	0.00				0.00	
N ₂ O	0.00	0.00				0.00	
GHG Total CO ₂ e						0.00	50000
Hazardous Air Pollutants							
1,1,2,2-tetrachloroethane							
1,1,2-trichloroethane							
1,3-butadiene	0.0000	0.0000				0.0000	
1,3-dichloropropene							
Acetaldehyde	0.0001	0.0000				0.0001	
Acrolein	0.0000	0.0000				0.0000	
Benzene	0.0001	0.0001				0.0001	
Biphenyl							
Carbon tetrachloride							
Chlorobenzene							
Chloroform							
Ethylbenzene							
Ethylene dibromide							
Formaldehyde	0.0001	0.0001				0.0002	
Hexane							
Methanol							
Methylene chloride							
Naphthalene	0.0000	0.0000				0.0000	

Actual emissions: Engines

These pollutant totals represent the information you entered on the blue tabs.

Pollutant	Engine 1 (ton/yr)	Engine 2 (ton/yr)	Engine 3 (ton/yr)	Engine 4 (ton/yr)	Engine 5 (ton/yr)	Actual Emissions (ton/yr)	Opt. D Permit Limits (ton/yr)
PAH	0.0000	0.0000				0.0000	
Phenol							
Styrene							
Tetrachloroethane							
Toluene	0.0000	0.0000				0.0001	
Vinyl chloride							
Xylene	0.0000	0.0000				0.0000	
HAP Indiv. Max	Formaldehyde					0.0002	5
HAP total						0.0006	12.5

Summary of Requirements¹
40 CFR part 60, subpart JJJJ
Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

For engines less than or equal to 25 horsepower,
constructed after June 12, 2006 and manufactured on or after July 1, 2008

NOTE: To refer directly to the regulatory text, please go to [Subpart JJJJ](#) (scroll down to almost the end of the page).

Emission Standards: 60.4231(a) and 60.4233(a)

60.4231(a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as follows:

If engine displacement is	and manufacturing dates are	the engine must meet emission standards and related requirements for nonhandheld engines under
(1) below 225 cc	July 1, 2008 to December 31, 2011	40 CFR part 90.
(2) below 225 cc	January 1, 2012 or later	40 CFR part 1054.
(3) at or above 225 cc	July 1, 2008 to December 31, 2010	40 CFR part 90.
(4) at or above 225 cc	January 1, 2011 or later	40 CFR part 1054.

¹Disclaimer: The content provided in this software tool is intended solely as assistance for potential reporters to aid in assessing requirements for compliance under the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR Part 60 Subpart JJJJ. Any variation between the rule and the information provided in this tool is unintentional, and, in the case of such variations, the requirements of the rule govern. Use of this tool does not constitute an assessment by EPA of the applicability of the rule to any particular facility. In any particular case, EPA will make its assessment by applying the law and regulations to the specific facts of the case.

60.4233(a): Owners and operators of stationary sparking ignition internal combustion engine with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in §60.4231(a) for their stationary sparking ignition internal combustion engine.

Fuel Requirements: If using gasoline: 60.4235

60.4235: Owners and operators of stationary SI ICE subject to this subpart that use gasoline must use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195.

Importing/Installing Requirements: 60.4236(a),(d)

60.4236(a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in §60.4233.

60.4236(d) In addition to the requirements specified in §§60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.

Compliance Requirements for Engines Being Operated and Maintained in a Certified Manner:

If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you are operating in a certified manner.

General Compliance: 60.4234, 60.4243(a)(1), 40 CFR part 1068, subparts A-D, as applicable.

60.4234: Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.

60.4243(a)(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subpart A-D, as applicable, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

If using Air-to-Fuel Ratio Controller: 60.4243(g)

60.4243(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

Performance Testing: No Requirements

Compliance Requirements for Engines Being Operated and Maintained in a non-Certified Manner:

If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to manufacturer's emission-related written instructions, your engine will be considered a non-certified engine.

General Compliance: 60.4234, 60.4243(a)(2)(i)

60.4234: Owners and operators of stationary sparking ignition internal combustion engine must operate and maintain stationary sparking ignition internal combustion engine that achieve the emission standards as required in §60.4233 over the entire life of the engine.

60.4243(a)(2)(i): If you are an owner or operator of a stationary SI internal combustion engine less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.

If using Air-to-Fuel Ratio Controller: 60.4243(g)

60.4243(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

Performance Testing: No requirements

Notification, Reports, and Requirements: 60.4245(a)

60.4245(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

- (1) All notifications submitted to comply with this subpart and all documentation supporting any notification.
- (2) Maintenance conducted on the engine.
- (3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.
- (4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

General Provisions (40 CFR part 60): 60.4246, Table 3

60.4246: Table 3 to this subpart shows which parts of the General Provisions in §60.1 through §60.19 apply to you.

RICE NESHAP Summary of Requirements¹

Non-Emergency Spark Ignition 4-Stroke Lean Burn

New & Reconstructed Stationary Engine

Located at Area Source of HAP, constructed on or after June 12, 2006

Requirements: Engines are subject to 40 CFR part 60, [subpart JJJJ](#) (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines).

Per 40 CFR 60.4219:

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

¹ Disclaimer: The content provided in this software tool is intended solely as assistance for potential reporters to aid in assessing requirements for compliance under the reciprocating internal combustion engines (RICE) National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 63 Subpart ZZZZ. Any variation between the rule and the information provided in this tool is unintentional, and, in the case of such variations, the requirements of the rule govern. Use of this tool does not constitute an assessment by EPA of the applicability of the rule to any particular facility. In any particular case, EPA will make its assessment by applying the law and regulations to the specific facts of the case.