

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **012018-004**

Project Number: 2017-08-050
Installation Number: 147-0023

Parent Company: Kawasaki Heavy Industries Ltd.

Parent Company Address: 1-1 Kawasaki-Cho, Akashi, Japan

Installation Name: Kawasaki Motors Manufacturing Corp.

Installation Address: 28147 Hwy 71, Maryville, MO 64427

Location Information: Nodaway County, S34, T64, R35E

Application for Authority to Construct was made for:

A die cast machine, an assembly line, a crank case line, a crankshaft line, a cylinder head line, an emergency generator, and an oil-fired heater. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.


Prepared by
Susan Heckenkamp
New Source Review Unit


Director or Designee
Department of Natural Resources

JAN 26 2018

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Kawasaki Motors Manufacturing Corp.
Nodaway County, S34, T64, R35E

1. Superseding Condition
 - A. The conditions of this permit supersede Special Condition 2 found in the previously issued construction permit 082016-012 issued by the Air Pollution Control Program.
2. Emission Limitations
 - A. Kawasaki Motors Manufacturing Corporation shall emit less than 250.0 tons of VOCs from the entire installation in any consecutive 12-month period.
 - B. Kawasaki Motors Manufacturing Corporation shall emit less than 10.0 tons individually and 25.0 tons combined of HAPs from the entire installation in any consecutive 12-month period.
 - C. Kawasaki Motors Manufacturing Corporation shall emit less than 250.0 tons of CO from the entire installation in any consecutive 12-month period.
 - D. Kawasaki Motors Manufacturing Corporation must determine the total amount of VOC, HAPs and CO emitted from the installation. Attachment A, B and C or equivalent forms approved by the Air Pollution Control Program shall be used to calculate emission associated with this project. These project emissions shall be added to the installation emissions from Attachment E through L of Operating Permit OP2015-038A or shall be included in equivalent approved forms in order to demonstrate compliance with Special Conditions 2.A, 2.B and 2.C.
 - E. Kawasaki Motors Manufacturing Corporation shall maintain records of:
 - 1) Safety Data Sheets (SDS) for all materials used at the installation;
 - 2) Flux manufacturer's declarations of flux fluorides binding to dross for all fluxes used (i.e. sf350, sf206 and COVERAL 777).
2. Control Device Requirement-Electrostatic Precipitators (ESP)
 - A. Kawasaki Motors Manufacturing Corp. shall control emissions from the aluminum die cast machine (DCF21) using an ESP as specified in the permit application.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. The ESP shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Kawasaki Motors Manufacturing Corp. shall equip the ESP with an alarm system that continuously monitors the operating parameters and detects if the system has failed. Operating parameters include voltage, amperage and spark over the filters.
 - D. Kawasaki Motors Manufacturing Corp. shall maintain an operating and maintenance log for the ESP which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
4. Record Keeping and Reporting Requirements
- A. Kawasaki Motors Manufacturing Corporation shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - B. Kawasaki Motors Manufacturing Corporation shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2017-08-050
Installation ID Number: 147-0023
Permit Number: **012018-004**

Installation Address:

Kawasaki Motors Manufacturing Corp.
28147 Hwy 71
Maryville, MO 64427

Parent Company:

Kawasaki Heavy Industries Ltd.
1-1 Kawasaki-Cho
Akashi, Japan

Nodaway County, S34, T64, R35

REVIEW SUMMARY

- Kawasaki Motors Manufacturing Corp. has applied for authority to construct the following: Addition of a die cast machine 11, assembly line 13, crank case line 2 C&D, crankshaft line 4, cylinder head line 9, an emergency generator, and an oil fired heater.
- The application was deemed complete on September 1, 2017.
- HAP emissions are expected from the proposed equipment in small amounts from the combustion of natural gas, oil burning, and gasoline burning.
- None of the New Source Performance Standards (NSPS) apply to the project.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- An electrostatic precipitator is being used to control the PM, PM₁₀, and PM_{2.5} emissions from the die cast machine equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are conditioned below de minimis levels for this project. A special condition requiring the use of an ESP limits particulate emissions.
- This installation is located in Nodaway County, an attainment/unclassifiable area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- Submittal of a Part 70 Operating Permit application is required for this installation within one year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Kawasaki Motors Manufacturing Corporation operates a gasoline engine manufacturing installation in Maryville, Missouri, (Nodaway County). Kawasaki Motors builds engines ranging from 4.5 horsepower (hp) up to 35.0 hp. These engines are primarily used in walk-behind lawn mowers, riding lawn mowers and all-terrain vehicles.

Kawasaki Motors Manufacturing Corporation is not considered an existing major source for construction permitting because of the 250-ton annual limit for applicable pollutants. For New Source Review purposes, it is considered a minor source. The installation holds a Part 70 State Operating Permit most recently renewed in permit OP2015-038.

The following projects for Kawasaki Motors Manufacturing Corporation have been processed by the Air Pollution Control Program.

Table 1: Previous Permit Projects

Permit Number	Description
No permit Required	2015-12-007 Machining Line Like Kind Replacement
OP2015-038	2014-07-041 Part 70 Operating Permit Renewal
No permit Required	2014-03-044 Painting Process
No permit Required	2012-04-051 Emergency Generator
082008-007A	2012-02-074 Remove emission limitation
102009-004A	2012-02-030 Remove emission limitation
OP2010-039C	2012-02-031 Part 70 Operating Permit Modification
OP2010-039B	2012-01-059 Consolidation of natural gas recording (change of form)
OP2010-039A	2011-10-032 Consolidation of record keeping points (change of form)
No permit Required	2011-05-019 Assembly lines
No permit Required	2010-04-002 Die Casting furnace

Permit Number	Description
102009-004A	2009-10-028 Corrections to issued permit
012010-003	2009-09-023 Burn-off furnace
OP2010-039	2009-07-005 Part 70 Operating Permit
102009-004	2009-02-033 new die casting machine, new crankcase machining line and new cylinder head machining line
082008-007	2008-04-002 Furnace Replacement
092007-011	2007-05-059 Endurance testing Facility
062007-004	2006-10-085: Use of aviation fuel
	2006-09-062: Use of aviation fuel-applicability determination
092005-001A	2006-04-058: Amendment remove conditions
No Permit Required	2006-03-045: Die casting and crankcase machining
	2006-03-047: Part 70 Operating Permit Amendment
	2005-10-020: Update Part 70 Operating Permit
092005-001	2005-05-106: Install four new processes
	2004-11-068: Intermediate Operating Permit Amendment
012005-002	2004-10-003: Add two small engine assembly lines
032004-006	2003-10-049: Installation of a machining operation
No Permit Required	2003-06-036: Engine testing exhaust fans
	2003-05-092: Intermediate Operating Permit Amendment
082003-011	2003-05-091: Installation of a engine assembly line
	2003-02-097: Applicability, permit required for new lines.
	2002-06-097: Intermediate Operating Permit application
	2002-05-002: Correction or amendment change retaining compound.
No Permit Required	2001-05-090: 680cc LPG engines.
No Permit Required	2001-03-092: Installation of natural gas engines.
062001-001	2001-02-113: Installation of a wet vacuum impregnation system to seal porosity in aluminum parts
112000-010	2000-09-054: Installation of two (2) gasoline engine assembly lines
0699-024	1999-03-119: Installation of an assembly line for building internal combustion engines and installation of an electrode position paint system
	1998-05-636: major source review, closed out
0598-012	1998-02-0221: Addition of a wet paint booth and a process heater
	147-0023-020: Intermediate Operating Permit Application
0897-034	147-0023-017: Installation of a gasoline engine assembly line
0797-005	3340-0023-017: Installation of four (4) machining lines and six (6) heating/ventilation units
0494-009	3340-0023-016: Installation of an aluminum die casting machine and a machine process

Permit Number	Description
0493-011	3340-0023-015: Installation of two (2) aluminum die casts and melting furnaces
0193-001	3340-0023-011: Installation of a powder paint booth
1291-004	3340-0023-009: Addition of chromate aluminum parts
	3340-0023-008: Amendment to 0791-001
0791-001	3340-0023-007: Installation of gasoline engine assembly line and aluminum scrap furnaces
1190-004	3340-0023-006: Addition of connecting rod machine line and injection molding
0890-001	3340-0023-005: Installation of aluminum die cast engines
082016-012	2016-05-062 : Melting furnace and die cast machine

PROJECT DESCRIPTION

Kawasaki proposes to install new processes at the gasoline engine manufacturing installation (147-0023) at this time. The processes include a die casting machine (DCF22) and melting furnace (DCF21). The melting furnace consists of two components: those associated with the combustion of fuel in the furnace (DCF21a) and the melting of aluminum (DCF21b). The melting furnace supplies molten aluminum metal for the die casting machine. The die cast machine is used for making small engine parts. The melting furnace will be natural gas fired and is rated at 2.65 MMBtu/hr. The MHDR of the new die cast machine is estimated to run at 100 percent efficiency and is 0.3 tons per hour.

A new crank case line (2 C&D), Cylinder head line 9, and Crankshaft line 4 are also being added. The emissions associated with these processes are due to VOC and HAPS from lubricant usage. These processing lines are included under the emission point MMF, which includes all machining line VOC and HAP emissions for the plant.

A new engine assembly line is also being added. There are two main sources of air emissions from the new assembly line (AET13): 1) the combustion of gasoline in the run up test stands, and 2) the use of break wash for cleaning the engines. The new assembly line will operate in a similar fashion to the existing lines. The engine runs while the RPM and idle adjustments are made. The engine is shut off and the oil and gasoline are drained out of the engine. The engine then goes on down the line to packaging area to be boxed for shipment.

A 1.78 MMBTU/hr natural gas emergency generator (EG04) is also being installed with this project as well as an oil fired heater (EU-WW1) used for comfort heat in their waste water area. The 0.35 MMBtu/hr oil fired heater will use waste oil from the facility.

Table 2: Project emission units

Emission unit	Description	MHDR
AET13 (GR-AE)	Assembly line 13	Break wash: 2.1 oz/ engine Gasoline: 0.025 gal/ engine
DCF22 (GR-DCF)	Melting furnace	2.65 MMBtu/hr (NG)
DCF21 (GR-DCM)	Die cast machine	0.3 tons/ hour
MMF	Crankcase line 2 C&D, Cylinder head line 9, Crankshaft line 4, &	N/D (based on coolant use)
EG04	Emergency generator	1.78 MMBTU/hr (NG)
WW1	Waste oil heater (waste water area hearer)	0.35 MMBtu/hr (Waste Oil)

EMISSIONS/CONTROLS EVALUATION

Emissions from the melting furnace and natural gas emergency generator were calculated using emissions factors from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Addition, Section 1.4 "Natural Gas Combustion," July 1998, SCC 1-02-006-02. PM₁₀ is emitted from the melting of aluminum. These emissions were calculated using an emissions factor from AP-42 Section 12.8, "Secondary Aluminum Operations," October 1986, SCC 3-04-001-03. The controlled emission factor was used because of the use of an electrostatic precipitator. Emissions from the die casting machine were calculated using emission factors from the Factor Information Retrieval (FIRE) Data System, Version 6.25, SCC 3-04-001-14.

Emissions from the use of fluxes were not calculated. Based on the information provided by the permittee and included in Permit No. 082008-007A, the emissions of fluorides, hydrogen fluoride (HF), and hydrogen chloride (HCl) are expected to be minimal. In statements from the flux manufacturer, when the flux is used properly almost all of the fluorides and chlorides will combine with the hydrogen and associated impurities in the aluminum bath. Although emissions are not expected to be zero, they are expected to be well below major source and SMAL thresholds.

The assembled motors use just enough fuel to get the motor running before they are shut down; therefore the size of the motor does not greatly affect fuel usage. Regardless, the potential emissions of one test stand using the emission factors for the gasoline engine assembly taken from AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants dated March 1990. PTE for gasoline usage at the test stand was calculated at 2.16 gal/hour of unleaded fuel. Mass balance analysis was used when calculating PTE of the break wash fluid (SDS sheet) used in assembly line 13 @ 2.1 oz. per engine.

Emissions from the waste oil fueled heater at 0.35 MMBtu/hr were calculated using Fuel oil #2 combustion emission factors which were obtained from AP-42's Section 1.3 "Fuel Oil Combustion" (May 2010).

All machining fluid VOC and HAP emissions are calculated using the mass balance approach with fluid properties taken from SDS sheets. And shall be recorded under MMF emissions when record keeping.

The following table provides an emissions summary for this project. Existing actual emissions were taken from the installation's 2017 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tpy)

Pollutant	Regulatory De Minimis/ SMAL Levels	Existing Potential Emissions	Existing Actual Emissions (2017 EIQ)	Potential Emissions of the Application	Installation Conditioned Potential
PM	25.0	N/D	N/D	N/D	N/D
PM ₁₀	15.0	N/D	21.64	1.94	N/D
PM _{2.5}	10.0	N/D	11.08	1.94	N/D
SO _x	40.0	N/A	0.23	0.09	N/D
NO _x	40.0	< 40	5.91	3.11	<40.0
VOC	40.0	< 250	81.68	37.95	<250.0
CO	100.0	< 250	86.45	38.93	<250.0
Total HAPs	10/25.0	< 10/25.0	1.19	0.04	<10.0/25.0
HCl	10	N/D	N/D	N/D	N/D
HF	0.1	N/D	N/D	N/D	N/D

N/A = Not Applicable; N/D = Not Determined

*HCl and HF emissions are dependent on flux. Amounts are expected to be well below limitation thresholds.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are conditioned below installation wide limits levels.

APPLICABLE REQUIREMENTS

Kawasaki Motors Manufacturing Corp. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Operating Permits*, 10 CSR 10-6.065
- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required annually.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 17, 2017, received August 22, 2017, designating Kawasaki Heavy Industries Ltd. as the owner and operator of the installation.

Attachment A**
VOC and CO and HAP Monthly Compliance Worksheet
Kawasaki Motors Manufacturing Corporation Nodaway County, S31, T64, R35
Project Number: 2017-08-050 Installation ID Number: 147-0023

01 2 0 1 8 - 0 0 4

For Month _____ Year _____

Emission Point	Usage Units	(a) Usage Amt.	(b)VOC Emission Factor	(b)HAP Emission Factor	(b)CO Emission Factor	(c) VOC (lb)	(c) HAP (lb)	(c) CO (lb)
Example: Gasoline Emission Point	gallons	76.50	0.148 lb/gal	0.0	3.94 lb/gal	11.3	0.0	301.41
AET13 (unleaded gasoline)	gallons		0.148 lb/gal	0.0	3.94 lb/gal			
EG04	MMCF		5.5 lb/ MMCF	1.88 lb/MMCF	84.0 lb/MMCF			
DCF21a	MMCF		5.5 lb/ MMCF	1.88 lb/MMCF	84.0lb/MMCF			
DCF21b & DCF22	Tons of Al		0.140 lb/gal	N/A	N/A			
WW1	gallons		0.0002 lb/gal	7.9×10^{-5} lb/gal	0.005 lb/ gal			
(d) lbs of pollutant:								
(e) Attachment A Total Monthly Tons:								

1. Enter usage amount (a)
2. Multiply (a)*corresponding (b) = corresponding (c)
3. Add all Column (c) for each pollutant in corresponding row (d)
4. (d)/2000 lb = (e) tons of each pollutant

DCF21b and DCF22 were combined for VOC, HAP, and CO emissions.

****Note: This sheet is only for the project emissions associated with AET13, EG04, DCF21a, DCF21b, DCF22, and WW1. Emissions from this sheet shall be added to the appropriate tracking sheets in OP2015-038A.**

Attachment B**
Material VOC Monthly Compliance Worksheet

01 2018 - 004

For Month

Year

Point	Product	Part #	VOC %	Density (lb/gal)	Usage- (gal)	VOCs (lbs)	Container Size
MMF	Lubricant Usage (FGE-50) 4		4.96%	7.73			
	Water miscible cutting fluid usage (Yuma S-83F)		14.7%	8.82			
GRAE	AET 13 (break wash fluid)		100.0%	5.92			
VOC (tons):							

1. VOC (%) * Density * Usage (gallons) = VOCs-lbs

2. VOCs-lb/2,000lb = VOC (tons)

**Note: This sheet is only for the project VOC emissions associated with the crank case line (2 C&D), Cylinder head line 9, and Crankshaft line along with break wash fluid usage in assembly line 13. Emissions from this sheet shall be added to the appropriate tracking sheets in OP2015-038A.

Attachment C**
HAP Monthly Compliance Work Sheet
Kawasaki Motors Manufacturing Corporation
Nodaway County, S31, T64, R35
Project Number 2016-05-062
Installation ID Number 147-0023

For Month _____ Year _____

01 2018 - 004

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	
HAP Chemical	CAS #	Product	Gallons used	% HAP	Density (lb/gal)	Lbs of HAPs	Tons of HAPs	
Example Benzene	71-43-2	Cleaning solution	15	0.5%	8.5	63.75	0.031	
Toluene	108-88-3	Machining fluid (FGE-50)		0.1%	7.7			
Toluene	108-88-3	Machining fluid (SF-83F)		0.1%	8.7			
Vinyl Acetate	108-05-4	MFA Motor oil		0.01 %	7.34			
Benzene	71-43-2	MFA Motor oil		0.001%	7.34			
Toluene	108-88-3	Water soluble cleaning fluid		0.1%	8.7			
Toluene	108-88-3	MFA INDUST EP ISO 220		0.01%	7.39			
			(I) Monthly Total Tons:					

1. Enter the number of gallons used. (D)
2. (D)*(E)*(F) = (G)
3. (G)/2000 = (H)
4. Sum of column (H) in row (I)
5. (I) + previous 11 months HAP emissions + HAP emissions from attachment A= (J)

**Note: This sheet is only for the project HAP emissions associated with crank case line (2 C&D), Cylinder head line 9, and Crankshaft line. Emissions from this sheet shall be added to the appropriate tracking sheets in OP2015-038A.

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACTBest Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAMCompliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CASChemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMSContinuous Emission Monitor System	NO_xnitrogen oxides
CFRCode of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO₂ecarbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMSContinuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSRCode of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EPEmission Point	RACTReasonable Available Control Technology
EPAEnvironmental Protection Agency	RALRisk Assessment Level
EUEmission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ftfeet	SDSSafety Data Sheet
GACTGenerally Available Control Technology	SICStandard Industrial Classification
GHGGreenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWPGlobal Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	SSMStartup, Shutdown & Malfunction
hrhour	tphtons per hour
hphorsepower	tpytons per year
lbpound	VMTvehicle miles traveled
lbs/hrpounds per hour	VOCVolatile Organic Compound
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	

Air Pollution Control Program

Table of Hazardous Air Pollutants and Screening Model Action Levels

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ACETALDEHYDE	75-07-0	9		Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N
ACETAMIDE	60-35-5	1		Y	N	CHLOROPRENE	126-99-8	1		Y	N
ACETONITRILE	75-05-8	4		Y	N	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y
ACETOPHENONE	98-86-2	1		Y	N	CHROMIUM COMPOUNDS		5	L	N	Y
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CHRYSENE	218-01-9	0.01	V	Y	N
ACROLEIN	107-02-8	0.04		Y	N	COBALT COMPOUNDS		0.1	M	N	Y
ACRYLAMIDE	79-06-1	0.02		Y	N	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N
ACRYLIC ACID	79-10-7	0.6		Y	N	CRESOL, [META-]	108-39-4	1	B	Y	N
ACRYLONITRILE	107-13-1	0.3		Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N
AMINOBIIPHENYL, [4-]	92-67-1	1	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N
ANILINE	62-53-3	1		Y	N	CUMENE	98-82-8	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	DDE	72-55-9	0.01	V	Y	Y
ANTIMONY COMPOUNDS		5	H	N	Y	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	DIAZOMETHANE	334-88-3	1		Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	DIOXINS/FURANS		6E-07	D,V	Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	DIBENZOFURAN	132-64-9	5	V	Y	N
ASBESTOS	1332-21-4	0	A	N	Y	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N
BENZENE	71-43-2	2		Y	N	DIBUTYL PHTHALATE	84-74-2	10		Y	Y
BENZIDINE	92-87-5	0.0003	V	Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3		Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	DICHLOROBENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DICHLOROMETHANE	75-09-2	10		N	N
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DICHLOROPHENOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y
BERYLLIUM SALTS		2E-05	J	N	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DICHLORVOS	62-73-7	0.2		Y	N
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIETHANOLAMINE	111-42-2	5		Y	N
BROMOFORM	75-25-2	10		Y	N	DIETHYL SULFATE	64-67-5	1		Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DIMETHYL FORMAMIDE	68-12-2	1		Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
CAPROLACTAM (Delisted)	105-60-2					DIMETHYL PHTHALATE	131-11-3	10		Y	N
CAPTAN	133-06-2	10		Y	Y	DIMETHYL SULFATE	77-78-1	0.1		Y	N
CARBARYL	63-25-2	10	V	Y	Y	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
CARBON DISULFIDE	75-15-0	1		Y	N	DIMETHYLANILINE, [N-N-]	121-69-7	1		Y	N
CARBON TETRACHLORIDE	56-23-5	1		Y	N	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
CARBONYL SULFIDE	463-58-1	5		Y	N	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
CATECHOL	120-80-9	5		Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
CHLORAMBEN	133-90-4	1		Y	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
CHLORDANE	57-74-9	0.01		Y	Y	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
CHLORINE	7782-50-5	0.1		N	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N
CHLOROACETIC ACID	79-11-8	0.1		Y	N	EPICHLOROHYDRIN	106-89-8	2		Y	N
CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
CHLOROBENZENE	108-90-7	10		Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-9	5	P	Y	N
CHLOROBENZILATE	510-15-6	0.4	V	Y	Y	ETHYL ACRYLATE	140-88-5	1		Y	N
CHLOROFORM	67-66-3	0.9		Y	N	ETHYL BENZENE	100-41-4	10		Y	N

Air Pollution Control Program

Table of Hazardous Air Pollutants and Screening Model Action Levels

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ETHYL CHLORIDE	75-00-3	10		Y	N	NITROBENZENE	98-95-3	1		Y	N
ETHYLENE GLYCOL	107-21-1	10		Y	N	NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N
ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2					NITROPHENOL, [4-]	100-02-7	5		Y	N
ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N	NITROPROPANE, [2-]	79-46-9	1		Y	N
ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003		Y	N	NITROSODIMETHYLAMINE, [N-]	62-75-9	0.001		Y	N
ETHYLENE OXIDE	75-21-8	0.1		Y	N	NITROSOMORPHOLINE, [N-]	59-89-2	1		Y	N
ETHYLENE THIOUREA	96-45-7	0.6		Y	Y	NITROSO-N-METHYLUREA, [N-]	684-93-5	0.0002		Y	N
FORMALDEHYDE	50-00-0	2		Y	N	OCTACHLORONAPHTHALENE	2234-13-1	0.01	V	Y	N
GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N	PARATHION	56-38-2	0.1		Y	Y
GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N	PCB [POLYCHLORINATED BIPHENYLS]	1336-36-3	0.009	X	Y	Y
HEPTACHLOR	76-44-8	0.02		Y	N	PENTACHLORONITROBENZENE	82-68-8	0.3		Y	N
HEXACHLOROBENZENE	118-74-1	0.01		Y	N	PENTACHLOROPHENOL	87-86-5	0.7		Y	N
HEXACHLOROBUTADIENE	87-68-3	0.9		Y	N	PHENOL	108-95-2	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N
HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N	PHOSGENE	75-44-5	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N	PHOSPHINE	7803-51-2	5		N	N
HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	PHTHALIC ANHYDRIDE	85-44-9	5		Y	N
HEXACHLOROETHANE	67-72-1	5		Y	N	POLYCYLIC ORGANIC MATTER		0.01	V	Y	N
HEXAMETHYLENE,-1,6-DIISOCYANATE	822-06-0	0.02		Y	N	PROPANE SULTONE, [1,3-]	1120-71-4	0.03		Y	Y
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N
HEXANE, [N-]	110-54-3	10		Y	N	PROPIONALDEHYDE	123-38-6	5		Y	N
HYDRAZINE	302-01-2	0.004		N	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y
HYDROGEN CHLORIDE	7647-01-0	10		N	N	PROPYLENE OXIDE	75-56-9	5		Y	N
HYDROGEN FLUORIDE	7664-39-3	0.1		N	N	PROPYLENEIMINE, [1,2-]	75-55-8	0.003		Y	N
HYDROQUINONE	123-31-9	1		Y	N	QUINOLINE	91-22-5	0.006		Y	N
INDENO[1,2,3CD]PYRENE	193-39-5	0.01	V	Y	N	QUINONE	106-51-4	5		Y	N
ISOPHORONE	78-59-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y
LEAD COMPOUNDS		0.01	Q	N	Y	SELENIUM COMPOUNDS		0.1	W	N	Y
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-89-9	0.01	F	Y	N	STYRENE	100-42-5	1		Y	N
MALEIC ANHYDRIDE	108-31-6	1		Y	N	STYRENE OXIDE	96-09-3	1		Y	N
MANGANESE COMPOUNDS		0.8	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN,[2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y
MERCURY COMPOUNDS		0.01	S	N	N	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N
METHANOL	67-56-1	10		Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N
METHOXYCHLOR	72-43-5	10	V	Y	Y	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N
METHOXYETHANOL, [2-]	109-86-4	10	P	Y	N	TOLUENE	108-88-3	10		Y	N
METHYL CHLORIDE	74-87-3	10		Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N
METHYL ETHYL KETONE (Delisted)	78-93-3					TOLUIDINE, [ORTHO-]	95-53-4	4		Y	N
METHYL HYDRAZINE	60-34-4	0.06		Y	N	TOXAPHENE	8001-35-2	0.01		Y	N
METHYL IODIDE	74-88-4	1		Y	N	TRICHLOROENZENE, [1,2,4-]	120-82-1	10		Y	N
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N
METHYL ISOCYANATE	624-83-9	0.1		Y	N	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N
METHYL METHACRYLATE	80-62-6	10		Y	N	TRICHLOROETHYLENE	79-01-6	10		Y	N
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	TRICHLOROPHENOL, [2,4,5-]	95-95-4	1		Y	N
METHYLCYCLOPENTADIENYL MANGANESE	12108-13-3	0.1	R	N	Y	TRICHLOROPHENOL, [2,4,6-]	88-06-2	6		Y	N
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TRIETHYLAMINE	121-44-8	10		Y	N
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TRIFLURALIN	1582-09-8	9		Y	Y
METHYLNAPHTHALENE, [2-]	91-57-6	0.01	V	Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
MINERAL FIBERS		0	T	N	Y	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
NAPHTHALENE	91-20-3	10	V	Y	N	VINYL ACETATE	108-05-4	1		Y	N
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	VINYL BROMIDE	593-60-2	0.6		Y	N
NAPHTHYLAMINE, [BETA-]	91-59-8	0.01	V	Y	N	VINYL CHLORIDE	75-01-4	0.2		Y	N
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	XYLENE, [META-]	108-38-3	10	G	Y	N
NICKEL COMPOUNDS		1	U	N	Y	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
NICKEL REFINERY DUST		0.08	U	N	Y						
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y						

Air Pollution Control Program Table of Hazardous Air Pollutants and Screening Model Action Levels

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Group
----------	-------	-----------------	-------------	-----	----	-------

Group ID	Chemical
A	Asbestos
B	Cresols/Cresylic Acid (isomers and mixtures)
C	2,4 - D, Salts and Esters
D	Dibenzofurans, Dibenzodioxins
E	4, 6 Dinitro-o-cresol, and Salts
F	Lindane (all isomers)
G	Xylenes (all isomers and mixtures)
H	Antimony Compounds
I	Arsenic Compounds
J	Beryllium Compounds
K	Cadmium Compounds
L	Chromium Compounds
M	Cobalt Compounds
N	Coke Oven Emissions
O	Cyanide Compounds
P	Glycol Ethers
Q	Lead Compounds (except elemental Lead)
R	Manganese Compounds
S	Mercury Compounds
T	Fine Mineral Fibers
U	Nickel Compounds
V	Polycyclic Organic Matter
W	Selenium Compounds
X	Polychlorinated Biphenyls (Aroclors)
Y	Radionuclides
Notes	The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million

Installation: Kawasaki Motors Manufacturing Corporation
 Project: 2017-08-080
 Installation ID: 147-0023

EU-#	Description	VOC (lb/yr)	Fluorine (lb/yr)	HF (lb/yr)	NOx (lb/yr)	CO (lb/yr)	SOx (lb/yr)	PM-10 (lb/yr)	HAP (lb/yr)	Calculation Method
DCF21a & EG04	Natural Gas Combustion= melting furnace (2.65 MMBTU/HR) + emergency generator (1.786 MMBtu/hr)	209.54			3809.74	3200.18	22.88	289.54	71.93	Natural gas HHV of 1,020 Btu/cf cited from AP-42 Section 1.4, July 1998.
DCF21b	Aluminum Melting							3416.4		SCC 30400103 MHDR 0.3 tons of metal per hour Controlled Emission Factor used because of electrostatic precipitator
DCF22	Die Casting Machine oil burning heaters for comfort heat in waste water area (35 MMBTU/hour)	387.92			26.28		52.56			SCC 30400114 MHDR 0.3 tons of metal per hour
WW-1	assembly line 13 breakwash (VOC)	4.525			452.47	113.12	4.887	52.03	1.79	SCC 1-02-005-02 industrial boiler no 2 distillate oil 10-100 MMBtu/hr
AET 13	assembly line 13 gasoline (engine run up)	72,520.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Mass Balance
AET13	assembly line 13 gasoline (engine run up)	2800.24			1828.90	74547.02	100.47	117,3074918		FIRE SCC 20400401

Entire Project		VOC	Fluorine	HF	NOx	CO	SOx	PM-10	HAP
Total Emissions(ty)		37,951	0.00E+00	0.00E+00	3,199	38,930	0.090	1,936	0.037
Total Emissions(lb/hr)		8,865	ND	ND	0.710	8,886	0.021	0.442	0.008

MHDR for Diecast machine and furnace was taken from Application at .3 tons/hour

Emission Unit	Description	Installation's Designation	MHDR (MMBtu/hr input)	Combined MHDR (MMBtu/hr input)	MHDR (MMctf/hr)	Pollutant	CAS	HAP?	Emission Factor (lb / mmcf)	Emission Factor Source (SCC)	Available Pollutant (lb/hr)	Control Device	PTE (lb/hr)	PTE (tpy)	PTE lb/yr
DCF-21a	Aluminum melting furnace		2.7	4.44	0.004	PM filterable			1.9		0.0083	none	0.0083	0.04	72.38508
						PM10			7.6		0.0331	none	0.0331	0.14	289.5403
						PM2.5			7.6		0.0331	none	0.0331	0.14	289.5403
						SOx			0.6		0.0028	none	0.0028	0.01	22.85845
						NOx			100		0.4349	none	0.4349	1.90	3809.741
EG04	emergency generator		1.786			VOC			5.5		0.0239	none	0.0239	0.10	209.5358
						CO			84		0.3653	none	0.3653	1.60	3200.183
						Combined HAPs			1.888		0.0082	none	0.0082	0.03596	71.92632
						POM aggregate group			6.98E-04		3.04E-06	none	3.04E-08	1.33E-05	0.0266
						2-Methylnaphthalene	91-57-6	y	2.40E-05		1.044E-07	none	1.04E-07	4.57E-07	0.000914
						3-Methylchloranthrene	56-49-5	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						7,12-Dimethylbenzanthracene	57-97-6	y	1.60E-05		6.958E-08	none	6.96E-08	3.05E-07	0.00061
						Acenaphthene	83-32-9	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Acenaphthylene	203-96-8	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Anthracene	120-12-7	y	2.40E-06		1.044E-08	none	1.04E-08	4.57E-08	9.14E-05
						Benanthracene	56-55-3	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Benzene	71-43-2	y	2.10E-03		9.133E-06	none	9.13E-06	4.00E-05	0.080005
						Benzo(a)pyrene	50-32-8	y	1.20E-06		5.219E-09	none	5.22E-09	2.29E-08	4.57E-05
						Benzo(b)fluoranthene	205-99-2	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Benzo(g,h,i)perylene	191-24-2	y	1.20E-06		5.219E-09	none	5.22E-09	2.29E-08	4.57E-05
						Benzo(k)fluoranthene	205-82-3	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Butane	106-97-8		2.10E+00		9.133E-03	none	9.13E-03	4.00E-02	80.00456
						Chrysene	218-01-9	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Dibenzo(a,h)anthracene	53-70-3	y	1.20E-06		5.219E-09	none	5.22E-09	2.29E-08	4.57E-05
						Dichlorobenzene	25321-22-6	y	1.20E-03		5.219E-06	none	5.22E-06	2.29E-05	0.045717
						Ethane	74-84-0		3.10E+00		1.348E-02	none	1.35E-02	5.91E-02	118.102
						Fluoranthene	206-44-0	y	3.00E-06		1.305E-08	none	1.30E-08	5.71E-08	0.000114
						Fluorene	86-73-7	y	2.80E-06		1.218E-08	none	1.22E-08	5.33E-08	0.000107
						Formaldehyde	50-00-0	y	7.50E-02		3.262E-04	none	3.26E-04	1.43E-03	2.857306
						Hexane	110-54-3	y	1.80E+00		7.828E-03	none	0.0078	0.03	68.57534
						Indeno(1,2,3-cd)pyrene	193-39-5	y	1.80E-06		7.828E-09	none	7.83E-09	3.43E-08	6.86E-05
						Naphthalene	91-20-3	y	6.10E-04		2.653E-06	none	2.65E-06	1.16E-05	0.023239
						Pentane	109-66-0		2.60E+00		1.131E-02	none	1.13E-02	4.95E-02	99.05327
						Phenanthrene	85-01-8	y	1.70E-05		7.393E-08	none	7.39E-08	3.24E-07	0.000648
						Propane	74-98-6		1.60E+00		6.958E-03	none	6.96E-03	3.05E-02	60.95586
						Pyrene	129-00-0	y	5.00E-06		2.175E-08	none	2.17E-08	9.52E-08	0.00019
						Toluene	108-88-3	y	3.40E-03		1.479E-05	none	1.48E-05	6.48E-05	0.129531
						Arsenic	7440-38-2	y	2.00E-04		8.698E-07	none	8.70E-07	3.81E-06	0.007619
						Barium	7440-39-3		4.40E-03		1.914E-05	none	1.91E-05	8.38E-05	0.167629
						Beryllium	7440-41-7	y	1.20E-05		5.219E-08	none	5.22E-08	2.29E-07	0.000457
						Cadmium	7440-43-9	y	1.10E-03		4.784E-06	none	4.78E-06	2.10E-05	0.041907
						Chromium	7440-47-3	y	1.40E-03		6.089E-06	none	6.09E-06	2.67E-05	0.053336
						Cobalt	7440-48-4	y	8.40E-05		3.653E-07	none	3.65E-07	1.60E-06	0.0032
						Copper	7440-50-8		8.50E-04		3.697E-06	none	3.70E-06	1.62E-05	0.032383
						Manganese	7439-96-5	y	3.80E-04		1.653E-06	none	1.65E-06	7.24E-06	0.014477
						Mercury	7439-97-6	y	2.60E-04		1.131E-06	none	1.13E-06	4.95E-06	0.009905
						Molybdenum	7439-98-7		1.10E-03		4.784E-06	none	4.78E-06	2.10E-05	0.041907
						Nickel	7440-02-0	y	2.10E-03		9.133E-06	none	9.13E-06	4.00E-05	0.080005
						Selenium	7782-49-2	y	2.40E-05		1.044E-07	none	1.04E-07	4.57E-07	0.000914
						Vanadium	7440-62-2		2.30E-03		1.000E-05	none	1.00E-05	4.38E-05	0.087624
						Zinc	7440-66-6		2.90E-02		1.261E-04	none	1.26E-04	5.52E-04	1.104825
						CO2			120,000		521.8824	none	521.882	2,285.84	4571689
						Methane			2.3		0.0100	none	0.0100	0.04	87.62405
						N2O			2.2		0.0096	none	0.0096	0.04191	83.81431
						GHG (mass)								2,285.930	0
						GHG (CO2e)								2,299.43	0

Natural Gas HHV (Btu/cf)
1,020

100yr GWP 40 CFR 98 Table A-1, Jan 1 2014	
CO2	1
CH4	25
N2O	298

Natural gas HHV of 1,020 Btu/cf cited from AP-42 Section 1.4, July 1998.

Dichlorobenzene group CAS 25321-22-6 conservatively assumed as 100% 1,4-dichlorobenzene CAS 106-46-7.

HAPs updated per "Air Pollution Control Program Table of Hazardous Air Pollutants, Screening Model Action Levels, and Risk Assessment Levels" Revision 10, 5/3/2012

Emission Unit	Description	Installation's Designation	MHDR (MMBtu/hr input)	Combined MHDR (MMBtu/hr input)	MHDR (1,000 gal/hr)	Pollutant	CAS	HAP?	Emission Factor	Emission Factor Units	Emission Factor Source	Available Pollutant (lb/hr)	Control Device	PTE (lb/hr)	PTE (tpy)	PTE lb/yr
EU-WW1	waste water area heater	0	0.4	0.4	0.003	PM filterable			2		SCC 1-02-005-02 industrial boiler no 2 distillate oil 10-100 MMBtu/hr	0.0052	none	0.0052	0.02	45.24704
0		0	0.0		PM10			2.30		0.0059		none	0.0059	0.03	52.0341	
0		0	0.0		PM2.5			1.55		0.0040		none	0.0040	0.02	35.06646	
0		0	0.0		SOx			0.2160		0.0006		none	0.0006	0.00	4.886681	
						NOx			20			0.0517	none	0.0517	0.23	452.4704
						NMTOC as VOC			0.2			0.0005	none	0.0005	0.00	4.524704
						CO			5			0.0129	none	0.0129	0.06	113.1176
						Combined HAPS			0.0790			0.0002	none	0.0002	0.00	1.786246
						POM aggregate group			4.49E-03			1.16E-05	none	1.16E-05	5.08E-05	0.101626
						POM (particulate only)		y	0.0033			0.0000	none	8.52E-06	3.73E-05	0.074658
						Formaldehyde	50-00-0	y	6.10E-02			1.5754E-04	none	0.0002	0.00	1.380035
						Benzene	71-43-2	y	2.14E-04			5.5268E-07	none	5.53E-07	2.42E-06	0.004841
						Ethylbenzene	100-41-4	y	6.36E-05			1.6425E-07	none	1.64E-07	7.19E-07	0.001439
						Naphthalene	91-20-3	y	1.13E-03			2.9183E-06	none	2.92E-06	1.28E-05	0.025565
						1,1,1-Trichloroethane	71-55-6	y	2.36E-04			6.0949E-07	none	6.09E-07	2.67E-06	0.005339
						Toluene	108-88-3	y	6.20E-03			1.6012E-05	none	1.60E-05	7.01E-05	0.140266
						o-Xylene	95-47-6	y	1.09E-04			2.8150E-07	none	2.82E-07	1.23E-06	0.002466
						Acenaphthene	83-32-9	y	2.11E-05			5.4493E-08	none	5.45E-08	2.39E-07	0.000477
						Acenaphthylene	208-96-8	y	2.53E-07			6.5340E-10	none	6.53E-10	2.86E-09	5.72E-06
						Anthracene	120-12-7	y	1.22E-06			3.1508E-09	none	3.15E-09	1.38E-08	2.76E-05
						Benz(a)anthracene	56-55-3	y	4.01E-06			1.0356E-08	none	1.04E-08	4.54E-08	9.07E-05
						Benzo(b)fluoranthene	205-99-2	y	1.48E-06			3.8222E-09	none	3.82E-09	1.67E-08	3.35E-05
						Benzo(k)fluoranthene	207-08-9	y	1.48E-06			3.8222E-09	none	3.82E-09	1.67E-08	3.35E-05
						Benzo(g,h,i)perylene	191-24-2	y	2.26E-06			5.8367E-09	none	5.84E-09	2.56E-08	5.11E-05
						Chrysene	218-01-9	y	2.38E-06			6.1466E-09	none	6.15E-09	2.69E-08	5.38E-05
						Dibenzo(a,h)anthracene	53-70-3	y	1.67E-06			4.3129E-09	none	4.31E-09	1.89E-08	3.78E-05
						Fluoranthene	206-44-0	y	4.84E-06			1.2500E-08	none	1.25E-08	5.47E-08	0.000109
						Fluorene	86-73-7	y	4.47E-06			1.1544E-08	none	1.15E-08	5.06E-08	0.000101
						Indo(1,2,3-cd)pyrene	193-39-5	y	2.14E-06			5.5268E-09	none	5.53E-09	2.42E-08	4.84E-05
						Phenanthrene	85-01-8	y	1.05E-05			2.7117E-08	none	2.71E-08	1.19E-07	0.000238
						Pyrene	129-00-0	y	4.25E-06			1.0976E-08	none	1.10E-08	4.81E-08	9.61E-05
						OCDD (dioxin)	3268-87-9	y	3.10E-09			8.0060E-12	none	8.01E-12	3.51E-11	7.01E-08
						Arsenic		y	4			1.4000E-06	none	1.40E-06	6.13E-06	0.012264
						Beryllium		y	3			1.0500E-06	none	1.05E-06	4.60E-06	0.009198
						Cadmium		y	3			1.0500E-06	none	1.05E-06	4.60E-06	0.009198
						Chromium		y	3			1.0500E-06	none	1.05E-06	4.60E-06	0.009198
						Copper			6			2.1000E-06	none	2.10E-06	9.20E-06	0.018396
						Lead		y	9			3.1500E-06	none	3.15E-06	1.38E-05	0.027594
						Mercury		y	3			1.0500E-06	none	1.05E-06	4.60E-06	0.009198
						Manganese		y	6			2.1000E-06	none	2.10E-06	9.20E-06	0.018396
						Nickel		y	3			1.0500E-06	none	1.05E-06	4.60E-06	0.009198
						Selenium		y	15			5.2500E-06	none	5.25E-06	2.30E-05	0.04599
						Zinc			4			1.4000E-06	none	1.40E-06	6.13E-06	0.012264
						CO2			22,300			57.59	none	57.5918	252.25	504504.5
						CH4			0.052			0.00	none	0.0001	0.00	1.176423
						N2O			0.26			0.00	none	0.0007	0.00	5.882116
						GHG (mass)									252.26	0
						GHG (CO2e)									253.14	0

Sulfur Content (wt %)	ULSD HHV (Btu/gal)
0.0015%	135,523
ULSD Density (lb/gal)	
7.1	

100yr GWP 40 CFR 98 Table A-1, Jan 1 2014

CO2	1
CH4	25
N2O	298

Emission factor for Benzo(b,k)fluoranthene conservatively applied to each (b) and (k)
 ULSD Diesel HHV reduced 1.1% on a volume basis from LSD. Reference: USEIA "The Transition to Ultra-Low-Sulfur Diesel Fuel: Effects on Prices and Supply" Report #: SR-OIAF/2001-01
 PM, PM10, and PM2.5 emission factors cited from AP-42 Table 1.3-1, 1.3-2, 1.3-6 for industrial boiler May 2010.

Asslymbly line 13

Breakwash PTE @ 8760 hrs per year
5.83 parts per gallon are VOC
2.10 oz per engine
86.50 engines per hour at 100% efficiency

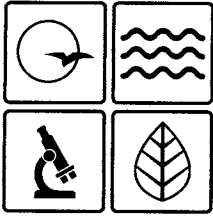
181.65 oz/hr
1.42 gallon/hr

8.28 lb VOC/hr
72,520.54 lb VOC/ yr

36.26 tpy VOC

Installation Information		Project No:	2017-08-050	1/23/2018								
ID No:	147-0023	Operating Schedule:	<table border="1"> <tr> <th>Hours/Day</th> <th>Days/Week</th> <th>Weeks/Year</th> <th>Total Hours</th> </tr> <tr> <td>24.0</td> <td>7</td> <td>52.1</td> <td>8760</td> </tr> </table>	Hours/Day	Days/Week	Weeks/Year	Total Hours	24.0	7	52.1	8760	
Hours/Day	Days/Week	Weeks/Year	Total Hours									
24.0	7	52.1	8760									
Name:	Kawasaki Motors Manufacturing Corp.											
Address:	28147 Bus Hwy 71, Maryville, MO 64468											
County:	Nodaway											
CSTR:	S31, T64, R35											

Unit ID	Description of Unit(s)	S%	PM ₁₀	SO _x	NO _x	VOG	CO	Lead	HAPs
????	Assembly Engine Testing Line 13	1.0	Emission Factors:						
			6.20	5.31	102.00	148.00	3940.00		
			Control Efficiency %:						
			0.01	0.01	0.22	0.32	8.51		
0.00216	MWDR Units 1000 gallons/hr		Controlled Emissions (lb/hr):						
			0.06	0.05	0.96	1.40	37.27		
??????	Miscellaneous Fugitive Chemical E HAP (Solvent Usage for degreasing)	1.0	Emission Factors:						
			Control Efficiency %:						
			Controlled Emissions (lb/hr):						
0	Tons product/hr		Controlled Emissions (tpy):						



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

JAN 26 2018

Mr. Todd Turner
Environmental Supervisor
Kawasaki Motors Manufacturing Corp.
28147 Highway 71
Maryville, MO 64427

RE: New Source Review Permit - Project Number: 2017-08-050

Dear Mr. Turner:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



Recycled paper

Mr. Todd Turner
Page Two

If you have any questions regarding this permit, please do not hesitate to contact Jordan Hull at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp
New Source Review Unit Chief

SH;jh

Enclosures

c: Kansas City Regional Office
PAMS File: 2017-08-050

Permit Number: **012018-004**